Combat Support and Combat Service Support Expansion to the Virtual Training Program SIMNET Battalion Exercise: History and Lessons Learned

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14. ABSTRACT *(Maximum 200 words)*:

This report describes the addition of combat support (CS) and combat service support (CSS) training to the battalion exercises of the Virtual Training Program (VTP) at Fort Knox, Kentucky. Training support packages (TSPs) provide battalions with all of the background needed to step into the simulation networking facilities (SIMNET) and begin training.

Trial units were generally positive about the training opportunities for the mortar, medical, maintenance, and support platoon leaders. Opportunities to practice battle tracking, communications, and coordination were cited as significant benefits by training participants. The lessons learned include insights concerning:

- the benefits of mixing CSS functions in a structured, maneuver execution exercise,
- the need to simultaneously consider training scenario and simulation capabilities when selecting tasks for a training exercise,
- the evolution of training design and the need to systematically incorporate lessons learned from the ongoing implementation of the VTP program,
- the importance of partnership with the O/C team for developing new training components for the VTP, and
- the robustness of the training design to the use of the unit's own order during the exercise.

These themes are not new; however, after several years of continuing development efforts, conclusions are changing.

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FOREWORD

Within today's Army, two conflicting forces are at work: decreasing resources for training, and increasing demands for highly trained and proficient personnel. Force reductions and other cost efficiencies require the Army to reduce its expenditures for high-fidelity institutional and field training. At the same time, introduction of more complex systems and equipment, changes to doctrine and organization, and a changing geopolitical landscape require that training be more committed to quality and efficiency than ever before.

To meet these challenges, Congress provided Fiscal Year 1993 research and development funding for the establishment of a Reserve Component Virtual Training Program (RCVTP) at Fort Knox, Kentucky. The intent of this program was to provide structured, compressed training focused initially on Army National Guard (ARNG) armor units, making innovative use of available simulation technologies. Then, for Fiscal Year 1994, research and development (R&D) funds were provided for the establishment of the Force XXI Training Program (formerly known as the Virtual Brigade Training Program) at Fort Knox, Kentucky. The intent of this program was to explore and utilize simulation technologies and instructional principles to create structured training programs that fully leverage available resources in providing efficient, effective training to brigade staffs. The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) has been involved in both efforts.

The ARI Armored Forces Research Unit (AFRU) at Fort Knox accomplished training and development for the RCVTP through a contract effort entitled "Simulation-Based Multiechelon Training Program for Armor Units (SIMUTA)." AFRU continued its research efforts by teaming with the U.S. Army Armor Center to develop and execute the Force XXI Training Program. The R&D work was performed under a project known as the *Combined Arms Operations at Brigade Level, Realistically Achieved Through Simulation (COBRAS)*.

This report describes work that is the legacy of both of the above lines of research. COBRAS training incorporates all aspects of brigade activity, including all combat support (CS) and combat service support (CSS). SIMUTA focused only on maneuver actions. Therefore, in order for battalion staffs using SIMUTA to be more fully prepared to participate in a COBRAS brigade exercise, SIMUTA exercises were retrofitted with training opportunities for the key leaders of the battalion CS and CSS. This report describes how those training opportunities were added and present formative evaluation results. The report is an important guide for training developers who may be constructing similar exercises and for training policy makers considering future directions in unit training.

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COMBAT SUPPORT AND COMBAT SERVICE SUPPORT EXPANSION TO THE
VIRTUAL TRAINING PROGRAM SIMNET BATTALION EXERCISE: HISTORY AND
LESSONS LEARNED

EXECUTIVE SUMMARY

Research Requirement:

The research report describes the addition of CS and CSS training to an existing battalion maneuver training program. The existing program is the Virtual Training Program (VTP) which includes battalion exercises conducted with the simulations networking (SIMNET) facilities of the Mounted Warfare Simulations Training Center (MWSTC) at Fort Knox, Kentucky. Three exercises are included, movement to contact, defense in sector, and deliberate attack. Each exercise includes only the execution phase of the battle. Training support packages (TSPs) provide participating battalions with all of the background needed to step into the simulation and begin executing, including prepared battalion orders.

The additional training for the mortar, medical, maintenance, and support platoons is intended to enhance the overall training value of these exercises. This report describes the original exercise, the development process for expanding it, and the final training product. In addition, the report describes the evaluation procedures for the program and presents several more general lessons learned about training development in the military simulation environment.

Procedure:

Addition of the CS and CSS components to the VTP battalion SIMNET training was completed in a nine-step process, with the first five steps being simultaneous rather than sequential. The steps include:

- Analyzing Fort Knox SIMNET and VTP observer/controller (O/C) team capabilities for providing maintenance, support, medical, and mortar platoon training opportunities
- Reviewing the existing TSP, including the tactical scenario and training scope
- Developing the training concept, including determination of the training audience
- Elaborating training tasks for new participants
- Allocating tasks to simulation
- Developing mortar and CSS platoon orders to support training tasks
- Detailing basic training plan
- Developing SIMNET files
- Pilot testing expansion concepts
- Modifying VTP TSPs to include CS and CSS information
- Conducting O/C rehearsal of add-on components and revising TSP components
- Conducting unit trials during full battalion exercise and revising TSP components

Findings:

Simulation facilities shape the addition of mortar, medical, maintenance, and support platoon activities in two major ways. First, the MWSTC includes a limited number of manned virtual training simulators. These include only M1 tank and M2 Bradley versions. When all maneuver personnel are present for training, all of the manned simulators are used. Manned simulators for vehicles typical of mortar, medical, maintenance, and support operators are not available. On the other hand, the MWSTC includes Modified Semi-Automated Forces (ModSAF) workstations which can produce computer generated presentations of these vehicles and their actions. Therefore, CS and CSS actions can be synthetically generated, with their actions integrated with those of the manned combat simulators. Given these facilities, training benefits are available to the leadership of these platoons. They can read the battlefield through typical report channels, track the battle, and coordinate the actions of their platoon's assets. The ModSAF operators then enact the actions directed by the mortar, medical, maintenance, and support platoon leaders.

Mortar actions were readily synchronized with the execution of the battalion battle. The CSS actions, however, intensify before and after the battle. Nevertheless, sufficient losses occur for the medical and maintenance platoon leaders to begin coordinating the actions of their platoon. Actions for the support platoon develop more slowly. However, they do have a mortar resupply mission, and the platoon leader has the opportunity to practice tracking the battle and positioning his assets for use during consolidation and reorganization. Because of these CSS additions, opportunities are significantly enhanced for company first sergeants and combat trained command post personnel to practice coordinating company and battalion CSS activities.

Trial units were generally positive about the training opportunities for the mortar, medical, maintenance, and support platoon leaders. Opportunities to practice battle tracking, communications, and coordination were cited as significant benefits by training participants.

A number of general lessons learned evolved. Briefly, these include insights concerning pilots, rehearsal, and trials. The lessons learned include insights concerning

- the benefits of mixing CSS functions into a structured, maneuver execution exercise
- the need to simultaneously consider the training scenario and simulation capabilities when selecting tasks to include in the training exercise
- the evolution of training design and the need to systemically incorporate lessons learned from the ongoing implementation of the VTP program
- the importance of partnership with the O/C team for developing new training components for the VTP
- the robustness of the training design to the use of the unit's own order during the exercise

These themes are not new. In fact, all five are variations on lessons from the original development of the VTP exercises. However, after several years of continuing efforts, the conclusions are changing.

Utilization of Findings:

Based on the reactions of the trial units, the training appears to fill a role in the integration of combat, CS, and CSS practice. This report documents that conclusion. In addition, this report fills three other needs. First, the report provides contract sponsors with documentation about the development efforts that created the training products. Second, the report provides training developers, who are assigned similar research and development efforts, a case study from which to gain some insights into the kinds of issues, decisions, and dilemmas that may arise in the construction of simulation exercises. Third, the report, particularly the lessons learned section, may be of interest to training policymakers considering future directions in unit training using simulation.

COMBAT SUPPORT AND COMBAT SERVICE SUPPORT EXPANSION TO THE VIRTUAL TRAINING PROGRAM SIMNET BATTALION EXERCISE: HISTORY AND LESSONS LEARNED

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INTRODUCTION

The purpose of this report is to describe the addition of combat support (CS) and combat service support (CSS) training to an existing battalion maneuver exercise. The report will briefly describe the original exercise, the development process for expanding it, and the final product. In addition, the report will describe the evaluation procedures and document units' reactions to trials of the expansion. Finally, the report will present several general lessons learned about training development in the military simulation environment.

The report is intended for three audiences. First, the report provides contract sponsors with documentation about the development efforts which created the training products. The training products themselves, however, are not presented in this report. Second, the report provides training developers, who are assigned similar research and development efforts, a case study from which to gain some insights into the kinds of issues, decisions, and dilemmas that may arise in the construction of simulation exercises. Third, the report, particularly the lessons learned section, may be of interest to training policymakers considering future directions in unit training using simulation. The report assumes that the reader is familiar with, although not necessarily an expert in, military missions that battalions conduct and the personnel and equipment assets with which they conduct these missions.

BACKGROUND: THE BATTALION VIRTUAL TRAINING PROGRAM SIMULATIONS NETWORKING TRAINING EXERCISE

Development History

The Virtual Training Program (VTP) is an expanding collection of platoon, company, battalion, battalion staff, and brigade staff training exercises which use simulations. Exercises are structured to ensure that events occur to drive practice of the maneuver tasks associated with three separate missions. Each exercise incorporates a prepared operations orders with supporting graphics, specifications for the actions of a standard (opposing force [OPFOR]), and complete instructions for simulations set-up. These materials are assembled in a training support package (TSP) which guides observer/controllers (O/Cs) in the conduct of the training and after action reviews (AARs).

The VTP began as the Reserve Component Virtual Training Program (RCVTP) and the creation of platoon, company, battalion, and battalion staff exercise for two missions, movement to contact and defense in sector. Platoon, company, and battalion exercises were created for the simulations networking (SIMNET) facilities of the Mounted Warfare Simulations Training Center (MWSTC) at Fort Knox, Kentucky. This facility networks together simulation modules that replicate M1 Abrams tanks and Bradley fighting vehicles. Inside these virtual reality modules, crews view the battlefield (including each others' actions), maneuver their vehicles, and engage

threat forces. Hoffman, Graves, Koger, Flynn, and Sever (1995) provides the history and lessons learned for that development. Locally, these exercises have retained the acronym of the contract under which they were developed, SIMUTA (*Simulation-Based Multiechelon Training Program for Armor Units*). The SIMUTA battalion level SIMNET exercises are the origin for the expansion documented in this report. These exercises created the training structure to which CS and CSS functions were added.

Following the SIMUTA project, brigade staff training exercises for three missions were added to the VTP collection (Koger, Long, Britt, Sanders, Broadwater, Brewer, 1996). These included movement to contact, area defense, and deliberate attack. Because the brigade movement to contact and area defense missions were different from the SIMUTA battalion level missions, a third effort, called SIMUTA-B, created revisions to the platoon, company, and battalion SIMNET exercises that match the brigade missions. In the process, SIMUTA-B created platoon, company, and battalion SIMNET exercises for a deliberate attack mission. Although the basic training concepts were not altered from the original SIMUTA design, SIMUTA-B also reformatted the TSP incorporating suggestions from the VTP O/Cs who implement the training. Graves and Myers (in press) documents the history and lessons learned for SIMUTA-B. The SIMUTA-B, therefore, provided the tactical scenarios and the TSP that were modified by adding instructions for including CS and CSS training.

Battalion SIMNET Training

The VTP battalion level SIMNET exercises bring together the battalion's staff and maneuver (tank and Bradley) forces (just over 200 persons). Maneuver forces operate in the simulation modules; the staff operates in areas laid out like command posts. Radios provide the communications linkages.

The exercises are execution-only. The offensive missions begin with the battalion crossing its line of departure. The defensive mission begins when the enemy enters the battalion's area of operations. The exercises continue until the resolution of the conflict. The exercises were originally designed for National Guard units to conduct during a special visit to Fort Knox. The execute only design allows maximum training time in the simulations. This is training time that cannot be replicated at home station. Therefore, mission planning is not part of the training program. Orders and graphics are provided to the unit far enough in advance of the exercise for them to become thoroughly acquainted with the scenario and mission prior to their trip to Fort Knox.

The O/Cs monitor and control the exercise with the assistance of workstations that are networked with the simulator modules. These workstations, called ModSAF stations for *mod*ular *semiautomated forces*, perform several functions. Reading data from the network, they generate battlefield views similar to the manned simulators. The ModSAF views, however, are much more flexible so O/Cs can see, from any angle, any part of the battlefield they choose. The ModSAF workstations also include a plan view display formatted with military graphics. In addition, the workstations can also generate forces. This capability is used to enact enemy actions and to substitute for friendly entities that have no manned simulators. For example, friendly engineer and artillery support are enacted by vehicles generated by ModSAF stations. Scripted OPFOR actions

are controlled using ModSAF by members of the O/C team. Finally, the ModSAF workstations can record the network data stream, so that a battle can be replayed and viewed from any vantage point selected at the time of replaying.

With the assistance of the monitoring and playback technology of the ModSAF workstations, O/Cs are able to construct and complete a series of AARs in about three hours. The O/C team monitors and presents AARs for each company, for both the main and combat trains command posts, for fire support staff, and for the battalion as a whole. In an extended training day, two repetitions of a battalion exercise with AARs are possible. A principal advantage to these exercises is their significant time savings compared to field training.

Training Support Packages

A major feature of the original SIMUTA design was to create "turn-key" exercises which free the unit from the intense labor of setting up an exercise. Using simulations to drive unit exercises is particularly difficult because of all of the nuances associated with the simulation system. Constructing an exercise that will reliably create all of the events and conditions needed to trigger practice opportunities is an intricate process. The VTP TSPs describe the actions needed on the part of the O/Cs and the unit participants. In addition, ModSAF files setup the simulation. These files include graphic overlays for the plan view display, computer instructions for representation of the enemy including initial locations, preplanned routes, formations, and march speeds for enemy vehicle, and computer instructions for representation of friendly CS units. Initial locations, routes, and speeds are critical for creating desired combat events. Although ModSAF operators can override any preplanned actions (and often have to do so in order to adjust to the units actions), the initial plan must be carefully created to facilitate orchestration of training events.

Implementation of the VTP Battalion SIMNET training program (SIMUTA-B) is documented in five TSP volumes, graphics overlays, and ModSAF data files. Volume I of the TSP contains general information for the O/C team, including information on (a) background and management of battalion task force training, (b) O/C team organization and training, (c) controlling the exercise, and (d) training objective task lists for the exercises. Volume II provides training participants with the general information they need to staff and prepare for the exercise, including information on the background of the exercise, information on managing battalion task force training in SIMNET, and training objective task lists. Volumes III, IV, and V provide more detailed information about each of the three missions. These volumes include orders and execution instructions, SIMNET Plan Sheets, O/C team duties and responsibilities, and AAR and take home package (THP) forms.

OBJECTIVES OF THE CS AND CSS EXPANSION

The objective of the CS and CSS expansion was to "develop prototype training exercises to include the maneuver battalion's mortar, medical, maintenance, [and] transportation components" (U.S. Army Research Institute [ARI], 1995, p. 6). Subsequent planning conferences with ARI clarified that the additional training was to be added to the VTP SIMNET exercise, specifically the SIMUTA-B versions. In addition, ARI guidance was to alter the existing program concepts

and TSP as little as possible. This included the constraint to design the additional training to be feasible within the current resources of the MWSTC and the Fort Knox O/C team. The objective was to integrate optional training opportunities for representatives from the battalion's mortar, maintenance, medical, and support (i.e., the "transportation component") platoons into the existing battalion SIMNET exercises.

MAJOR DEVELOPMENT ACTIVITIES

Addition of the CS and CSS components to the VTP battalion SIMNET training can be described as a nine-step process, with the first five steps being simultaneous rather than sequential. These include:

- Analyzing Fort Knox SIMNET and VTP O/C team capabilities for providing maintenance, support, medical, and mortar platoon training opportunities.
- Reviewing the SIMUTA-B TSP, including the tactical scenario and training scope.
- Developing the training concept, including determination of the training audience.
- Determining training tasks for new participants.
- Allocating tasks to simulation.
- Developing mortar and CSS platoon orders to support training tasks.
- Detailing basic training plan.
- Developing SIMNET files.
- Pilot testing expansion concepts.
- Modifying VTP TSPs to include CS and CSS information.
- Conducting O/C rehearsal of add-on components and revising TSP components.
- Conducting unit trials during full battalion exercise and revising TSP components.

Each of these activities will be described below. For readability, some of the more detailed information is placed in a series of appendices which may be consulted at the reader's discretion.

Analyze Fort Knox SIMNET and VTP O/C Team Capabilities

This step and the next one (review SIMUTA-B TSPs) were necessitated by the change in contracting mechanisms and personnel implementing the expansion. The expansion was not included in one of the contracts developing VTP exercises. Rather, the expansion was part of the *Combined Arms Operations at Brigade Level, Realistically Achieved Through Simulation* (COBRAS) contract which was principally focused on brigade level training that includes complete CS and CSS play in a Brigade/Battalion Battle Simulation (BBS) exercise. (See HumRRO, Hughes Training, Inc., BDM Federal, Inc., & PRC, Inc., 1995.) Several of the COBRAS team members assigned to work on the CS and CSS expansion of SIMUTA-B had worked either on the original SIMUTA or the SIMUTA-B revisions. Others, however, had no SIMUTA experience. On the other hand, CS and CSS expertise was available to a greater extent on the COBRAS team than on the original SIMUTA or SIMUTA-B development teams. Thus,

familiarization with SIMUTA and SIMUTA-B training concepts and the resources that support them were a necessary step in the design process.

The capabilities of the MWSTC and the O/C team were significant constraining features for the VTP designs and thus for the CS and CSS expansions. Manned simulators exist only for tanks and Bradley fighting vehicles, and these are in limited numbers. Bradley simulators (with weapon simulations disabled) have been used as if they were High Mobility Multipurpose Wheeled Vehicles (HMMWVs) for scouts to maneuver on the battlefield. This use, however, limits their availability for mechanized infantry platoons. Thus, any implementation of the VTP SIMNET battalion exercise entails unit and O/C decisions about the manning of the available simulators. Often the units are not fully staffed and manned simulators are available, but this cannot be counted on. Therefore, the addition of CS and CSS personnel cannot require utilization of simulators. There are only two other options currently available at the MWSTC for locating new training participants: being collocated with members of the O/C team at one of the ModSAF workstations or working in one of the simulated command posts. Although a few prototype reconfigurable simulators exist at the MWSTC, ARI advised against their use at this time.

The O/C team is also limited in number and is fully utilized during a battalion SIMNET exercise. Therefore, any additional training participants have to be covered by existing O/C resources. SIMUTA staffing already had an O/C assigned to the fire support element of the battalion and another one assigned to the combat trains command post. These two O/Cs are the natural selections for monitoring mortar actions and the additional CSS functions.

Finally, the ModSAF workstations' capabilities for generating vehicles also condition the design of CS and CSS training. ModSAF is a developing software, with new versions periodically being released. Later versions have included more CSS functions. Detailed experimentation with several different versions of ModSAF were conducted in order to determine which CS and CSS functions could be incorporated into the VTP scenarios. The experimentation simply consisted of operating the various functions in the respective ModSAF versions to confirm that they worked as indicated by accompanying documentation. Failures and inconsistencies were reported to MWSTC technical contractors.

Becoming familiar with the capabilities of the O/C team and ModSAF afforded the development team an important opportunity to work with key members of the O/C team. The SIMUTA history and lessons learned report emphasized the importance of the training development team and the O/C team working collaboratively. COBRAS training developers, therefore, wanted to ensure that their training design ideas were acceptable to the O/Cs who would be implementing them. Therefore, the development team initiated frequent informal discussions with members of the O/C team, beginning during this familiarization phase and continuing to the conclusion of the project. The development profited from these discussions in terms of the increased quality of the design and the acceptance and ownership of the product by the O/Cs.

Review SIMUTA-B TSP for Tactical Scenario and Training Concepts

The TSP documents the VTP training concepts in addition to the many details of exercise set-up. Several interrelated design features were significant for the expansion for mortar, maintenance, medical, and support platoon activities. First, although the VTP battalion level exercise provides multiechelon practice down to the crews of the tanks and Bradley fighting vehicles, O/C monitoring and feedback is only down to the company level. The emphasis of the training is on coordination of the battalion as a whole. Additional CS and CSS activities must be added within this perspective. Second, the VTP exercise is focused on battalion coordination during the execution phase of the battle. Mortar actions easily fit within this scope. The additional CSS actions, however, needed to be more critically reviewed because much of the battalion's CSS work occurs before and after the battle.

Less significant conceptually, but just as important for simulation of the battalion, the task organization of the battalion describes its assets and is, therefore, a significant guide to the preparation of ModSAF instructions. All assets, other than those represented by the manned tank and Bradley simulations, must be generated and controlled by ModSAF workstations. Adding CS and CSS to the training exercise requires the addition of simulated entities to enact new CS and CSS functions. Similarly, the tactical laydown of the battalion dictates locations of battalion assets. Locations for new assets must fit tactically and must be feasible in the simulation. This latter comment may be of little significance unless one is aware of the terrain limitations of simulations. That is, the SIMNET world is finite and operations can only be conducted within its boundaries. The addition of CSS adds considerably to terrain requirements.

Develop Training Concept, Including Determination of Training Audience

The above conditions narrow the options for the addition of mortar, medical, maintenance, and support platoon functions. Training design spiraled toward greater elaboration as the project progressed. At the most general level, one of the early decisions was that the exercise should be limited to incorporating platoon leadership positions that practice the command and control of their units within the context of the battalion operations. Training for these platoons, therefore, would focus on the coordination of their actions with the actions of the rest of the battalion. Elaboration of this decision led to consideration of the scope of each new platoon's activities within the VTP exercises and the specific allocation of these activities to new training audience members or to simulation. Consideration of training member activities also entailed consideration of the location of the new participants during the exercise.

Fire support. Mortar platoon activities include the maneuver and firing of mortars and the operation of the fire direction center (FDC) which controls those fires. These activities occur during the execution phase of the battle. The actions of the mortar platoon guns sections can only be simulated via ModSAF. On the other hand, decisions about movement of the mortar sections and processing of the battalion's calls for fire are activities that can be performed by the platoon leader and FDC personnel. These soldiers can respond to radio calls and transmit their orders to the ModSAF operators who replicate the maneuver and fires of the mortar platoon's gun sections. Therefore, the mortar platoon leader, mortar platoon sergeant, the FDC section sergeants and the FDC section specialist can all participate. An FDC can be collocated at a ModSAF work station

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or in one of the four MWSTC command posts. If available, the platoon leader and platoon sergeant could "ride" in a manned simulator with their weapons systems turned off. Members of the O/C team would have to maneuver and fire the ModSAF generated mortars.

Combat service support. Medical, maintenance, and support functions are the second echelon of CSS actions within the battalion. Each company has its own services in these areas. The battalion level assets (the medical, maintenance, and support platoons) operate in conjunction with the company's assets to provide services that the company cannot handle internally. The companies, therefore, represent one of the more significant coordination linkages for these platoons. The company first sergeants (1SGs) become key players because they are the primary upward linkage between the companies to the battalion. Given that the focus of training is on coordination of battalion assets, the inclusion of company 1SGs became a vital piece of the CSS expansion.

Also because the additional platoons are the second line of CSS action, much of their work follows the battle during consolidation and reorganization. On the other hand, the VTP exercises do not continue much beyond the resolution of the battle. Little, if any, consolidation and reorganization is played out despite design efforts to include these activities in order to give more meaningful work to the combat trains command post (Hoffman et al., 1995). The exercise simply tends to end shortly after the conclusion of the fighting. As a consequence, the identification of maintenance, medical, and support platoon actions that would reliably occur during the battle was important for the training design.

From the maintenance platoon, the Battalion Maintenance Officer, the Battalion Maintenance Technician, and the Battalion Maintenance Sergeant could participate. To replicate their location in the battalion trains, these persons could be placed in the combat trains command post.

Four possible positions were identified as candidates for medical platoon training: the Medical Platoon Leader, Medical Platoon Sergeant, the Medical Operations Officer, and the Physician's Assistant. Because of the tendency for some of these persons to be unavailable for training because they are actually providing medical care, the medical platoon sergeant may be the more likely training participants.

Finally, the Support Platoon Leader and the Support Platoon Sergeant represent the support platoons leadership. These personnel from the medical and support platoons can be located in available manned simulators or at the CSS ModSAF workstations. Table 1 summarizes the training participants representing the four additional platoons.

Table 1

Training Participants for CS and CSS Addition to the VTP Battalion SIMNET Exercise

Mortar Platoon	Medical Platoon
Mortar Platoon Leader	Medical Platoon Leader
Mortar Platoon Sergeant	Medical Platoon Sergeant
FDC Section Sergeant	Medical Operations Officer
FDC Section Specialist	Physician's Assistant
Support Platoon	Maintenance Platoon
Support Platoon Leader	Battalion Maintenance Officer
Support Platoon Sergeant	Battalion Maintenance Technician
	Battalion Maintenance Sergeant
Company First Sergeants	

TSP modifications. Because the CS and CSS expansions were to be developed as training options, the original plan was to write an addendum for the existing TSPs. This addendum would describe the CS and CSS options, and would leave the existing TSP material intact. On further review of the existing TSPs and their use, this option became less attractive. In a variety of places, the existing TSP describes the scope of the training, manning, scheduling, and so on. These descriptions as they exist do not, of course, reference the new options. Although the O/C team, from experience, would know about the new options, the training audience on first receipt of their Volume II unit information might find the omission confusing. An addendum that contradicts the basic volume would not be particularly helpful. In addition, the O/C team would need to pull material from an extra source (the addendum) in order to implement the exercise. This is not a robust system, particularly when the main source (the existing volumes) gives no clue about what should be pulled from the supplemental source. Therefore, the decision was made to document the CS and CSS options by modifying the SIMUTA-B TSP volumes.

Determine Training Tasks for New Participants

The above considerations clearly indicate that the general scope of the CS and CSS expansion must be for the platoon leadership positions to practice coordinating their platoon's activities with the rest of the battalion. The development team reviewed doctrinal materials to determine which tasks are required of the four new platoons within the context of the three battalion missions. Task identification followed the guidelines outlined in the *Methodology for the Development of Structured Simulation-Based Training* (C. H. Campbell, R. C. Campbell, Sanders, Flynn, & Myers, 1994), including analysis of the SIMUTA-B scenarios and application of the modified Burnside (1990) method for evaluating the applicability of the simulation for presenting opportunities to train the tasks. The Burnside method is a judgmental approach which leads to a summary about the extent to which the simulation allows training participants to receive appropriate cues and make correct actions for the execution of required tasks. The results of the

modified Burnside analysis are presented in Appendix A. The resulting task lists for the exercise are presented in Appendix B.

Allocating Tasks to Simulation

Our initial concept was to replicate all of the actions for each platoon using the ModSAF workstations. Instead of directing subordinate platoon members, the platoon leadership participating in the exercise would direct the ModSAF operators to replicate the actions of the platoon. The development team came to several interrelated realizations:

1. ModSAF workstations being used to the monitor at the company level would have to start controlling company level CSS actions in order to dovetail with battalion level CSS actions. For example, company ambulances would have to pick up casualties in order for them to be transferred to the battalion's medical platoon. Damaged vehicles would need to be retrieved by company assets before being turned over to the maintenance platoon.

2. Assets from higher echelons (e.g., the brigade Forward Support Battalion) would need to be simulated for complete battalion level CSS play to occur.

3. ModSAF workstation controllers could quickly become overloaded, particularly the CSS operator and fire support operators, with all of the potential work demands created by the mortar, medical, maintenance, and support platoon.

4. The amount of time it takes to simulate some of the CSS actions is so long that the exercise would be over before any effects of these actions could be detected. Thus, towing vehicles to the brigade support area will not effect a repair or provide a replacement vehicle within the time span of the exercise. There is, then, no point in having such activities played out by the ModSAF operators. Eliminating them from the simulation can free up operator time for actions that will have an impact on the simulation. However, the platoon leaders can and should make the radio calls that otherwise would create the action.

Based on these realizations, allocating tasks to the simulation rested on two decisions for candidate CSS tasks. First, would the task be completed within the time frame of the exercise? If so, it should be as fully replicated at the ModSAF workstation as possible. For tasks in which the time frame of completion was outside the scope of the exercise, a second question was needed. Were there initial cues, which should be visible in the simulation, that would show actions having been initiated? For example, the ambulances may begin to move to the brigade support area (BSA) even though the BSA is not simulated and the ambulances will never return.

For the mortar platoon, many of the tasks directed by the platoon leader would have immediate effects on the battle. The directions of the mortar platoon leader, therefore, needed to be completely enacted. To ensure that these tasks were executed by the ModSAF operator, adding a second fire support workstation was recommended. This recommendation seemed feasible, based on our understanding of O/C team staffing and ModSAF availability.

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In actuality, the design process was not as simple as presented. The workload overload potential was recognized early, but needed to be tested before it was accepted. In addition, understanding the role of the simulation in playing out long term events developed over time and needed to be tested. Finally, ModSAF did not always work according to its specifications. Therefore, some planned activities plan could not be used. For example, towing damaged vehicles using generated M88s was not reliably performed by ModSAF. Although its actions would have only long term consequences for the battle, initiating those actions by company vehicles would stimulate coordination on the part of the CTCP and the maintenance platoon. Therefore, decisions to simulate CSS activities with ModSAF actions were based on the need to provide short term effects for the actions and feasibility of enacting those actions. The products of these decisions were lists of actions directed to the ModSAF operators for the CSS workstation and the recommended mortar workstation. Final actions for the ModSAF operators are excerpted from the TSP in Appendix C.

Develop Mortar and CSS Platoon Orders to Support Training Tasks

In order for the training to remain focused on execution, orders were prepared for each of the four additional platoons, for each of the three battalion missions. Like the battalion orders, these orders are to be distributed to the training participants in advance of the exercise for them to become familiar with the scenario and their missions. The orders needed to meet two objectives: (1) be tactically consistent with the battalion orders, and (2) support the training tasks. In some cases, these two objectives conflicted because the original battalion orders were not written to support the training of the mortar and CSS platoons. For example, the SIMUTA-B battalion order placed the mortar platoon too far behind the lead company for it to support the scouts during the movement to contact. Instead of adjusting the battalion order per se, supplementary fragmentary orders (FRAGOs) were prepared for each mission. Use of these FRAGOs could be optional, depending on whether the CS and CSS training options were being used. Through the course of pilot and trials, several modifications (as noted in the following sections) were accomplished with the FRAGOs.

Detail Basic Training Plan

At this point in development, the new platoons' missions were delineated and tasks had been allocated to both training participants and ModSAF workstation operators based on the various phases of these missions. To ensure that these parts were integrated, the development team used scenario worksheets that listed chronologically the tasks which should be conducted by the training participant and the associated actions required of the ModSAF workstation operator. This worksheet outlined the basic information needed to add CS and CSS play to VTP battalion SIMNET exercise.

Figure 1 depicts the layout of CS and CSS participants for the exercise. It also indicates what functions ModSAF performs. Finally, it shows the communication linkage among the participants and ModSAF operators.
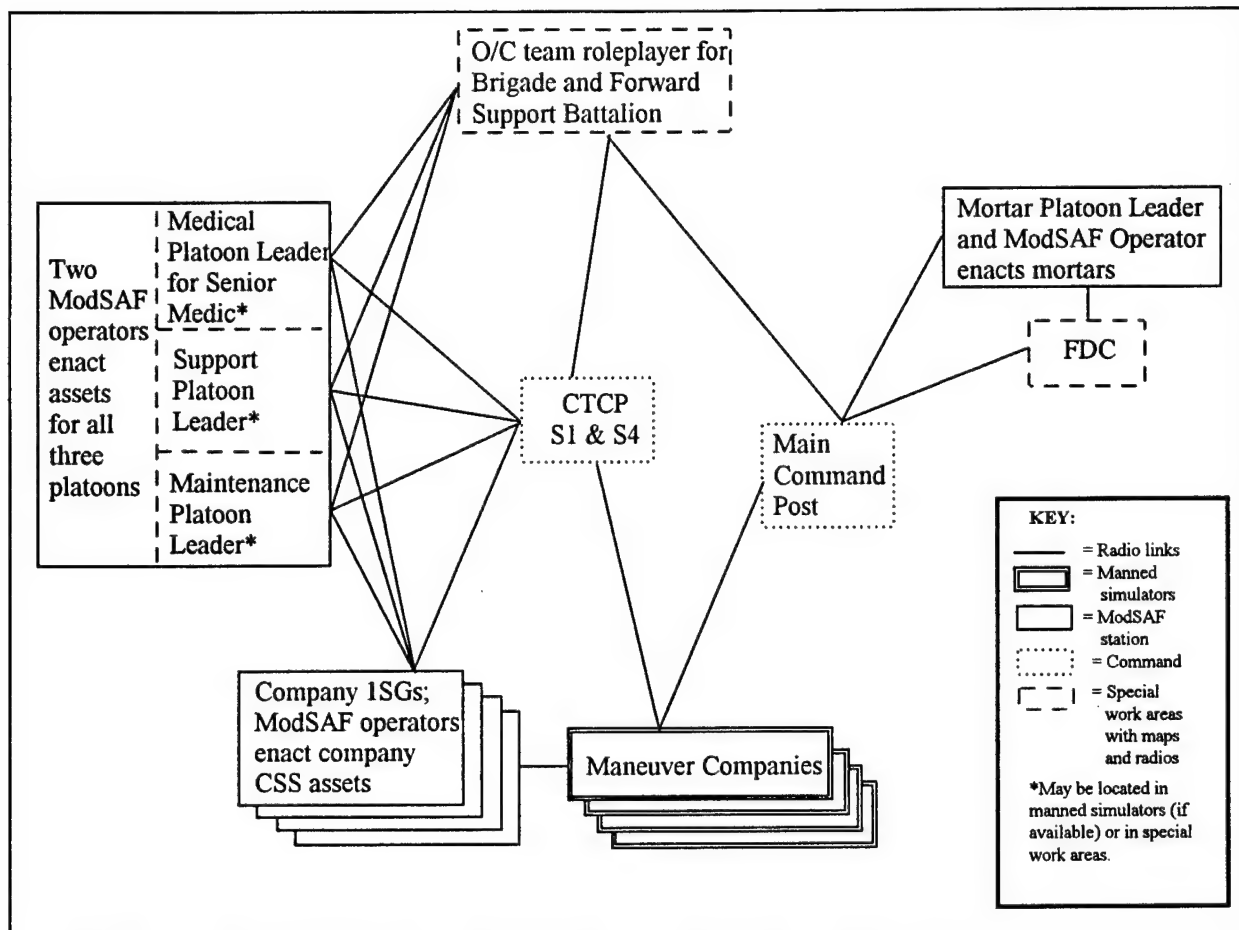
Figure 1. Layout for VTP battalion SIMNET exercise with mortar, maintenance, medical, and support platoon additions.

Develop SIMNET Files

The addition of mortar, medical, maintenance, and support platoon actions necessitated the addition of CS and CSS vehicles and supplies to the simulation environment. All of these vehicles were to be generated by ModSAF and controlled by the O/C team's ModSAF exercise controllers (ECs). ModSAF generates these vehicles from input data which list each vehicle and its starting location, plus the fuel, ammunition, and other supplies it has on board. Many of the vehicles are also grouped for easier control by the EC. These data were input and then stored in ModSAF files for later use. In addition, new graphics files which show the control measures for the new CS and CSS activities were generated and saved. A separate file was generated for each workstation, allocating vehicles according to the function being controlled at that workstation. These files allow the EC to call up an exercise with all of the needed vehicles positioned in the locations depicted by the mission, ready to control them as requested by the CS and CSS platoon leaders.

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Pilot Testing Expansion Concepts

Using the scenario worksheets, orders, and SIMNET files, a pilot test of the CS and CSS additions was run using the movement to contact mission. The pilot test was conducted using only ModSAF generated entities, including the tank and mechanized infantry companies which are normally play as manned simulators. The test focused on the additional CS and CSS entities and the actions which could be carried out with them while the maneuver fight is ongoing.

In general, the test confirmed the basic concepts. The simulated mortar, maintenance, medical, and support vehicles were able to function on the battlefield essentially as planned. There were the expected discoveries of errors in data entry for vehicles, supplies, and so on, and the need to adjust some starting locations. There were also some unexpected, but not surprising, discoveries of anomalous behavior in some ModSAF generated vehicles. For example, towing vehicles turned out not to behave as expected.

One of the important questions for the pilot test was whether the execution-oriented exercise would generate enough events to cue activity for the new training participants. There was little doubt that the mortar platoon could be kept busy during the exercise and indeed with some adjustment in their location, the platoon could support the maneuver units with fire missions. The development team had more concern about the level of activity of the other platoons. However, vehicle and personnel losses occurred early enough in the exercise to give the maintenance and medical platoons practice in the tasks identified.

On the other hand, the support platoon was not as active. The support platoon, however, can be ensured the mission of resupplying the mortar platoon, if the mortar platoon actively fires missions and is not overstocked with munitions at the beginning of the exercise. Although the support platoon *per se* may not be very active, these actions are only simulated. The platoon leader can monitor the battle, anticipate where the platoon's services will be needed, and begin to plan how to provide those services. Because the exercise may not last long enough for the planned actions to be carried out, the support platoon leader will receive no intrinsic feedback. Rather, the platoon leader will need to be monitored by the O/C and questioned regarding his plans for supporting the battalion's consolidation and reorganization efforts.

Modify VTP TSPs to Include Information for CS and CSS Training

At this point, the design and most of the details of the CS and CSS addition were completed. The next step was to document the information in the appropriate places in the existing TSP volumes. The general strategy was to add the necessary information wherever required in the existing volumes, noting that the inclusion of representatives from any or all of the four platoons was optional. For example, new CSS tasks were added to the existing observation, AAR, and THP materials for the CTCP O/C. Similarly, mortar tasks were added to the existing observation, AAR, and THP materials for the fire support O/C. Modifications were required in a surprisingly large number of places throughout all five volumes. Table 2 presents an overview of these changes made to the TSP.

Table 2

Major Additions and Modifications to Virtual Training Program Battalion SIMNET Training Support Package Volumes

Volume	Part	Chapter/Appendix	Addition/Modification
I: O/C Guide	N/A	Chapter 4-IV-3	Added key specialty platoon participants into "AAR Participation Schedule" table
		Appendix C and E	Replaced "ALOC" with "CTCP" in "Exercise Event Training Matrix" tables
		Appendix C, D, and E	Added task lists for each specialty platoon by mission
II: Participant's Guide	N/A	Chapter 2-I-2	Added specialty platoon participants into "Command Posts" block of "Manning Requirements"
		Chapter 2-I-2	Added specialty platoon participants into "Simulator Manning Options" table of "Manning Requirements"
		Chapter 2-IV-3	Added key specialty platoon participants into "AAR Participation Schedule" table
		Appendix C-2	Added mortar platoon items into "Suggested Supply List"
		Appendix D and F	Replaced "ALOC" with "CTCP" in "Exercise Event Training Matrix" tables
		Appendix D, E, and F	Added task lists for each specialty platoon by mission
III, IV, & V: MTC, DIS, & DATK	Part I	Chapter 1	Added tasks for 1SG/Co Tm Trains in Appendix 1 (Operations Execution Matrix of Bn and TF OPORD)
		Chapter 1	Added CSS locations from CSS overlay in Appendix 3 (CSS Graphics Locations of Bn and TF OPORD)
		Chapter 2	Added FRAGOs for each Bn order.
		Chapter 4, 5, 6, and 7	Added new chapter for each specialty platoon's OPORD
		Chapter 8	Added "BN/TF A/L" net into "SOI Extract" table
		Chapter 9	Added "MTR PLT" net into "SIMNET Frequency List" Table

(table continues)

Table 2 (continued)

Volume	Part	Chapter/Appendix	Addition/Modification
III, IV, & V: MTC, DIS, & DATK (cont'd)	Part I (cont'd)	Chapter 10	Revised "Master Scenario List" and "Master Overlay List"
		Chapter 11	Replaced "ALOC" with "CTCP" in "Exercise Event Training Matrix" tables
		Chapter 13	Added MET information into "Brigade Fire Control Net Radio Message List" table
		Chapter 15	Added key specialty platoon participants into "AAR Participation Schedule" table
	Part II	Chapter 1 and 2	Revised plan sheets for CSS and FS Included cargo to plan sheets
	Part III	Chapter 7-II-2	Revised CSS vehicle locations
	Part IV	Chapter 2-III-1	Revised Mortar platoon vehicle locations
		Chapter 2-III-8	Revised "Fire Support C/I Guidelines"
		Chapter 2-III-4	Added "Fire Support Responsibilities" block into "Other Fire Support Considerations"
	Part V	Chapter 1-III-2	Added instructions for CSS play into "Co/Tm O/I Guidelines" block of "Co/Tm O/I Duties"
		Chapter 1-III-2 and 2-III-2	Added tasks for 1SG/Co Tm Trains in Appendix 1 (Operations Execution Matrix of Bn and TF OPORD)
	Part VI	Chapter 1-II-3, 1-III-3, 1-IV-3, 1-V-3, 2-III-2	Added "End of Battle" and "Change of Mission" blocks at end of "Execution" for each observer in Volume V only
		End of Chapter 2	Revised instructions for Battle Loss Records
		End of Chapter 2	Added participants for specialty platoons for Battle Loss Records with and without pre-assigned injuries
		End of Chapter 2	Added Wound Description Guide
		Appendix	Changed summary and observation forms to incorporate specialty platoons

Conduct O/C Team Rehearsal of Add-on Components and Revising TSPs Components

Prior to conducting trials with units, a rehearsal of the movement to contact exercise was conducted. Like the pilot trial, no manned simulators were used. All vehicle actions were simulated by ModSAF generated entities. The rehearsal served to re-familiarize the O/C team with the SIMUTA-B mission which had only been run in test trials. It also provided the ECs an opportunity to practice manipulating mortars and CSS vehicles. In addition, the rehearsal allowed the O/Cs a chance watch mortar and CSS actions and to envision the activities that they would be monitoring when the unit's CS and CSS platoon representatives are present for training.

Finally, the rehearsal was a last minute check on the design of the program, including the utilization of ModSAF. Appendix D presents the problems identified (1) by development team members who closely monitored the rehearsal and (2) by the O/C team. The appendix also shows the actions taken.

Conduct Unit Trials and Revise TSP Components

Trials of the CS and CSS additions to SIMUTA-B were conducted with two different battalions.

Unit A came to the MWSTC with essentially their full battalion. The battalion SIMNET movement to contact exercise culminated a week of training on VTP platoon and company tables. Unit B came to the MWSTC with a reduced battalion, bringing maneuver unit personnel down to the platoon leader level only.

Table 3 indicates CS and CSS personnel who participated in the trials. In neither case did all of the recommended platoon members participate. However, between the two trial experiences, sufficient members were present to provide an indication of the feasibility and acceptability of the CS and CSS addition.

Four methods were used to collect feedback:
- Development team members monitored the exercise, observing all CS and CSS participants.
- The O/C team provided feedback through informal individual and group discussions.
- Development team member interviewed unit CS and CSS members and unit leadership.
- Unit CS and CSS members completed a questionnaire.

For Unit B, only the movement to contact and deliberate attack were fully monitored.

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Table 3

CS and CSS Personnel Participating in Trials

Unit	Exercise	CS and CSS Participants	Comments
A	Movement to contact	Mortar platoon leader and FDC Chief Senior Medic Support platoon leader Battalion Maintenance Officer and NCO Company 1SGs	Unit executed SIMUTA-B battalion order. The consolidation and reorganization phase was cut short in order to repeat the exercise. A major power failure thwarted the second run.
B	Movement to contact	Mortar platoon Fire Direction NCO, Mortarman Senior Medic Support platoon sergeant Company 1SGs (or acting 1SGs)	Unit executed SIMUTA-B battalion order.
	Area defense (defense in sector)	Same as above	The unit wrote and executed their own battalion order to the SIMUTA-B brigade mission.
	Deliberate attack	Same as above	The unit wrote and executed their own battalion order to the original SIMUTA brigade mission.

Observational feedback. Appendix D also includes the corrective feedback that was derived from the observations of the development team and the O/C team. The suggestions generally fine tune the design rather than overhaul it. The majority of the observations concern minor corrections and clarifications. For example, some errors and inconsistencies were discovered in the orders. No general rules or decision criteria were established for making suggested changes. Rather, each comment was reviewed individually and the action, as indicated in Appendix D, was taken.

The major recurring theme had to do with the placement of CSS personnel. There are three basic options for the placement of personnel: (a) in simulators, (b) at a workstations, or (c) in work areas with no access to ModSAF. Each of these is theoretically workable. The deciding factor for their implementation is the availability of resources, including O/Cs, ECs, ModSAF workstations, manned simulators, and additional work areas.

Unit feedback. Appendix E presents a summary of comments compiled from the interviews conducted with both units. Generally, the two units viewed the additional CS and CSS training as quite beneficial. They both made suggestions for minor changes in the program, primarily dealing with placement of CSS participants and ways to expand the CSS training. The discussions about the location of CSS participants during training paralleled those with O/Cs, described above.

Several suggestions were made for additional program expansions. These included

- adding company and platoon tables with CSS components to the VTP library,

- adding company-level CSS personnel to the battalion exercise, and

- creating additional time in the arrangement of AARs for the continuation of CSS activities into the consolidation and reorganization.

Only the last suggestion is within the scope of this contract and it is congruent with the intent of the original SIMUTA design.

Because Unit B was monitored twice, a special interview asked participants what they had learned during the movement to contact that they were able to apply to the deliberate attack. Participants cited coordination activities including quicker, more complete, and more organized reporting. The improved reporting was attributed to the unit developing a common mindset for viewing CSS activities. The focus on CSS during the movement to contact was also cited as helping the commander and XO understand CSS contingency planning. CSS platoon leaders also indicated that the movement of contact reinforced the need for advanced planning and the consequences of some of their actions.

The final source of program feedback was the unit questionnaires. These questionnaires addressed:

- The clarity and completeness of orders and graphics.

- The completeness of task lists.

- The difficulty level of the exercises.

- The adequacy of radio nets.

- Perceived training benefits.

- Suggestions for improvements.

Appendix F presents detailed results from these questionnaires.

The questionnaire results paint a picture of general satisfaction with some underlying qualifications. That is, generally orders and graphics were quite usable, but there were some errors detected. Task lists were essentially accepted with very few additions. The difficulty of the exercise was generally viewed as "about right." Radio traffic was rated as realistic, although in order for all nets to be covered units must bring additional hand held radios to supplement those in the MWSTC. Finally, an array of coordination and reporting tasks were cited as areas of improvement. This is exactly where the training is targeted.

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The questionnaire included a before and after self-rating of proficiency which used a seven point scale with 1 being "not proficient" and 7 being "extremely proficient." For movement to contact, the self-rating of proficiency went from an average of 5 to an average of 6. For the deliberate attack (which only Unit B conducted), average proficiency rating went from 4 to 5. Interestingly, Unit B participants judged their performance to be lower on the movement to contact than on the deliberate attack. This occurred even though the tasks were judged to be very similar and practicing the movement to contact was judged to have helped performance on the deliberate attack. Our interpretation is that as a result of the exercises, the participants changed their perceptions of the complexity of CSS coordination and, consequently, their preparedness for dealing with it.

There was some dissatisfaction with the level of activity for practicing "leader tasks." On the other hand, they were able to practice some important skills (e.g., battle tracking and contingency planning). Extending the exercise into the consolidation and reorganization phases will be important in order to provide these positions with more active practice in controlling their assets.

Summary. Overall the design and TSP materials proved satisfactory. The trials revealed the need for some minor adjustments to administrative instructions. Task lists and AAR instructions for the mortar platoon, support platoon, maintenance platoon, and medical platoon proved to be sound with little adjustment needed. Additionally, training materials developed for the company first sergeants' integration into the exercise proved successful and readily accepted by the company 1SGs. Participant feedback for the four headquarters platoons was highly positive for the CSS portion of the exercise.

LESSONS LEARNED

In addition to the feedback gained for the mortar, medical, maintenance, and support platoon optional training, several broader insights were gained. Some of these insights, or lessons learned, were gained by the early phases of development process. Others were derived from the pilots, rehearsal, and trials. The lessons learned include insights concerning

- mixing CSS functions into a structured, maneuver execution exercise,
- task selection for simulation training,
- the evolution of training design,
- partnership with the O/C team,
- the robustness of structure to the use of unit's orders.

These themes are not all new. In fact, all five are variations on lessons from SIMUTA (Hoffman et al., 1995). However, after several years of continuing efforts, the conclusions are changing.

CSS Training in a Maneuver Execution Exercise

The periods of intensive actions for combat and for CSS functions are not congruent and are paced by a different time perspective. Combat intensity occurs during the fight. CSS intensity is

between fights. Therefore, the development team was concerned that the CSS addition would not be synchronized with the execution-only training design. During the original SIMUTA development, attempts were made to engage company 1SGs in the exercise to feed information to the CTCP. These attempts were not successful. Company 1SGs chose not to participate, presumably because they did not feel they would get enough out of their involvement.

In contrast, the trials of the CSS addition demonstrated that CSS training during a SIMNET maneuver exercise can be beneficial. Sufficient activities occur during the exercise to provide the battalion's CSS system the opportunity to learn basic reporting and coordination procedures. The key word here may be "system." The training included sufficient CSS personnel, linked together to create an interdependency among the CSS players. The AARs concentrated on the units' coordination between maneuver company CSS assets and the maintenance, medical, and support platoon assets. For example, during AARs the support platoon leaders of both units described the importance of their actively tracking the battle, making adjustment in their support plans, and positioning vehicles to best deliver supplies where they appeared to be most needed. In other words, even during the maneuver battle, the CSS leadership is actively engaged in either the coordination of service delivery or in planning for service delivery according to the dynamic nature of the battle. The company 1SGs were extremely busy tracking battle losses and coordinating company CSS actions. In fact, during one AAR, one of the company 1SGs commented that this was some of the best CSS training he had ever had. Numerous comments were made during the trials about the desirability of extending the CSS add-on training to the VTP platoon and company tables. In other words, our initial misgivings were unfounded. The CSS training with the execution context, while not complete, is beneficial.

Tasks Included in Simulation Training

This lesson is a reinforcement of an original SIMUTA lesson (Hoffman et al., 1995). Tasks included in a scenario-based exercise must tell a logical story. Therefore, it is not always possible to develop a scenario from tasks that match a simulator's capabilities. Training developers must be prepared to augment simulations. Thus, the SIMUTA developers found the need to modify task selection with consideration of the scenario story. This then led to the need to augment the simulation with non-computer-based techniques. For example, role-players replicating higher and adjacent units were an adaptation required by the original SIMUTA design. The paper battle loss rosters were an adaptation required by the CSS extension. Another example is the mortar platoon FDC's computation of gun corrections based on weather. Bringing the tasks associated with weather corrections into the SIMUTA exercise became a matter of developing weather messages to be passed from the higher headquarters role-players.

The modified SIMUTA design methodology (Campbell et al., 1994) calls for filtering of tasks based on simulation capabilities and then putting back in tasks to complete a story. For argument sake, perhaps training developers should start with the assumption that the training scenario can include all tasks required by a given mission and then eliminate tasks (or subtasks) only when every feasible method of including them has been explored. After all, training needs analysis argues that it is more important that selected tasks fit training needs than it is that the tasks fit the simulation. Analyses of simulation capabilities are obviously necessary, however, creating a logical training story is intricate, complex, and requires creativity on the part of training

designers to develop workarounds for tasks not directed supported by the stimulation. Proposed automated methods of matching simulations and tasks that are envisioned by Force XXI (FXXI) planners may fall short when it comes to the creative invention of such workarounds.

An interesting extension of this lesson concerns the modification of an existing scenario. In grafting additional training participants to an existing VTP, it became evident that the existing scenario would have to produce sufficient cues to trigger the performance of tasks selected for these new participants. The challenge was to select those tasks that were more or less inevitable with the existing VTP scenarios. The tasks selected for each of the CSS functional platoons are adequate to train staff interaction for the CSS players to include company first sergeants. The first sergeants, although not specified as part of the training audience, are key players in these activities and have been included as an additional link in the battalion CSS functions. The extension of the lesson is that training developers need flexibility. Although not called for by the contract objectives, including company 1SGs was the only logical solution for the CSS expansion to the VTP battalion exercise.

The Evolution of Training Design

The TSP products are dynamic, whether planned that way or not. For the original SIMUTA project, the structured, execution-only training idea was unusual. Therefore, the primary concern when the SIMUTA TSP was released was that it remain intact and be used as designed. However, even before the original contract was completed, a new contract, SIMUTA-B, called for additions. Furthermore, partway through that contract, additional modifications were called for. Then, the present COBRAS contract addressed the addition of mortar, medical, maintenance, and support platoon functions. Each of the follow-on modifications have been precipitated by objectives external to the program. So far, contractors have been able to meet these objectives. However, the CSS addition may signal a new view.

The COBRAS team was asked to revise SIMUTA-B documents that were just in the final stages of delivery. We were able to revise the SIMUTA-B volumes to meet the objectives. However, we were never sure where our scope of effort ended. The TSPs are complicated documents, so it is not surprising that in reviewing them, inconsistencies and confusing information were discovered. In addition, new versions of ModSAF continue to be released. Therefore, with a desire to provide as sound a product as possible, we took on the added responsibility of updating ModSAF files and making edits in the TSPs.

The TSP configuration control, including review and revision, needs attention. Again, this is not a new lesson, but one that is revised from SIMUTA. The revision of the lesson is that change is inevitable and the need is not configuration control to maintain stability but configuration control to systematically evolve the TSP products as new training needs, new training missions, new simulation versions, and new doctrine come on line. Furthermore, the VTP is a mature program that should have gained valuable lessons by now. TSPs should be

continuously updated to reflect program enhancements that have been developed by the O/C team. Contracts that target spot corrections to existing materials can lead to missed opportunities and at the same time saddle contractors with ambiguous responsibilities. The VTP program would be well served by an in-house training consultant who could continuously update TSPs as new ideas and new objectives unfold.

ModSAF. An addendum to this lesson learned concerns the evolution of ModSAF. The ModSAF documentation has been rocky since the start of SIMUTA when the workstations were first introduced in the MWSTC. Because of the in-depth exploration required for design training, SIMUTA and COBRAS personnel have tended to lead the discovery learning needed to master new versions of ModSAF. The SIMUTA and COBRAS personnel, therefore, have provided informal, on-the-job training to ECs as a routine part of the job of conducting rehearsals and trials. More systematic efforts to include ECs in the discovery of new ModSAF capability training may be appropriate. An in-house training consultant could lead these efforts. In addition, an in-house consultant could also increase the communication in the opposite direction by providing ModSAF developers with timely information which could improve the evolution of their product.

Partnership With the O/C Team

In the original SIMUTA lessons learned, a comment was made about the difficult circumstances that hampered the development of collaborative relationships between training developers and the O/C team. Based on that lesson, the COBRAS developers systematically sought the advice and consult of the fire support and CSS O/C. A truly collaborative effort resulted. That collaboration paid off in products and concepts that the O/Cs embraced and energetically enacted during the trials. They are an important reason for the success of the CS and CSS expansion.

The Robustness of Structure to the Use of Unit's Orders

The SIMUTA concept is for participating units to execute a pre-packaged order. In order to do this, units receive the order in advance, and study it prior to arrival at the MWSTC. The concept has always been controversial and as reported in the SIMUTA lessons learned (Hoffman et al., 1995), one which units have subtly resisted. Units during the SIMUTA trials tended to execute variations of the pre-packaged order, making adjustments in both the movement to contact and defense in sector missions. On the other hand, task organizations, basic graphics, OPFOR actions, and preplanned messages remained intact.

In our expansion trials, unit B opted to write their own orders for the defense in sector and the deliberate attack. Again, the remaining parts of the training structure remained intact, including the plan of attack by the OPFOR. This change was essentially transparent for the training of the mortar, maintenance, medical, and support platoons. Instead of learning a pre-packaged order, these participants learned their own unit's order. Aside from that, their battle tracking, communications, and coordination of their assets allowed the same application of tasks as the pre-packaged order. The change was readily accommodated by the remainder of the battalion as well.

The lesson is that the strength of the structured training is not necessarily in the pre-packaged battalion order. Rather, the strength is providing the surrounding events (e.g., brigade order, threat timelines) that ensure the unit will have to practice predetermined tasks, regardless of their plan or how they option off of the pre-packaged plan. Unit B's trial missions demonstrate that it may be time to evolve the VTP to include unit planning as part of the training. Following the lead of the COBRAS brigade exercise, battalion level planning could be broken into segments with systematic coaching and AARs for each segment.

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TASK ANALYSES

Mortar Platoon

Plt	ARTEP 70-90-MTP Task Title	Number	Selected VIR	Live	BM	Not Selected TA	NSS	NVTP
MTR	Displace by Echelon	7-3/4-1201		X	M			
MTR	Leader Established Displacement Plan	7-3/4-1201.1		X	H			
MTR	Operate by Split Platoon	7-3/4-1202		X	M			
MTR	Platoon Leader Controls Both Squads	7-3/4-1202.3		X	P			
MTR	Occupy Firing Position	7-3/4-1203	X	X	M			
MTR	Leader Plans for Firing Position	7-3/4-1203.1		X	H			
MTR	Mortar Unit Leader	7-3/4-1203.2	X		P			
MTR	FDC Prepares to Receive Calls for Fire	7-3/4-1203.7		X	H			
MTR	Perform Tactical Road March	7-3/4-1204			N		X	
MTR	Perform Linkup	7-3/4-1205			N		X	
MTR	Perform Passage of Lines	7-3/4-1206			N		X	
MTR	Defend Against Ground Attack	7-3/4-1207			N		X	
MTR	Move Mounted	7-3/4-1208			N		X	
MTR	Move Dismounted	7-3/4-1209			N		X	
MTR	Occupy Assembly Area	7-3/4-1210			N		X	
MTR	Register and Adjust Parallel Sheaf	7-3/4-1215			N		X	
MTR	Fire Adjust Fire	7-3/4-1216			N		X	
MTR	Fire For Effect	7-3/4-1217			N		X	
MTR	Adjust Final Protective Fire	7-3/4-1218			N		X	
MTR	Fire Final Protective Fire	7-3/4-1219			N		X	
MTR	Fire Priority Target	7-3/4-1220			N		X	
MTR	Fire Time on Target	7-3/4-1221			N		X	
MTR	Fire Immediate Suppression/Smoke	7-3/4-1222			N		X	
MTR	Fire Quick Smoke	7-3/4-1223			N		X	
MTR	Fire Illumination	7-3/4-1224			N		X	
MTR	Fire Coordinated Illumination	7-3/4-1225			N		X	
MTR	Fire Simultaneous Missions	7-3/4-1226			N		X	
MTR	Operate Fire Direction Center	7-3/4-1227		X	H			
MTR	Reconnoiter Firing Position	7-3/4-1228	X		P			
MTR	Leaders Performs Map Recon & Plans Ground Recon	7-3/4-1228.1		X	H			
MTR	Unit Reconnoiters Route to Firing Position	7-3/4-1228.2	X		H			
MTR	Unit Reconnoiters & Selects Firing Position	7-3/4-1228.3	X		H			
MTR	Prepare for Chemical Attack	7-3/4-1229			N	X		
MTR	Prepare for Nuclear Attack	7-3/4-1230			N	X		
MTR	Maintain Operations Security	7-3/4-1231			N	X		
MTR	React to Air Attack	7-3/4-1232			N	X		
MTR	Sustain	7-3/4-1233		X	M			
MTR	Unit Submits Status Reports	7-3/4-1233.1		X	H			
MTR	Leader Anticipates Resupply	7-3/4-1233.2		X	H			
MTR	Senior NCO Ensures Basic Load on Hand	7-3/4-1233.3		X	P			
MTR	Leaders Know Location of Combat Trains	7-3/4-1233.6		X	H			
MTR	Leaders Submit Support Requests	7-3/4-1233.7		X	H			
MTR	Perform Vehicle Operations	7-3/4-1234			N		X	
MTR	Prepare for Combat	7-3/4-1235			N	X		
MTR	Consolidate & Reorganize	7-3/4-1236		X	M			
MTR	Leader Assigns Temporary Sectors of Fire	7-3/4-1236.5		X	H			
MTR	Unit Reestablishes Chain of Command	7-3/4-1236.8		X	M			
MTR	Leader Reports Status of Personnel & Equipment	7-3/4-1236.12		X	H			
MTR	Leader Requests Repair of Vehicles	7-3/4-1236.13		X	H			
MTR	Leader Collects Info about Operation	7-3/4-1236.14		X	H			
MTR	Plan & Control Combat Operations	7-3/4-1237		X	M			
MTR	Leader Issues Orders	7-3/4-1237.17		X	H			
MTR	Leader Issues FRAGOs to Unit	7-3/4-1237.18		X	H			
MTR	Unit Responds to Fire Request	7-3/4-1237.19		X	H			
MTR	Unit Coordinates Actions with Friendly Units	7-3/4-1237.20		X	H			
MTR	Unit Headquarters Reports Combat Critical Info	7-3/4-1237.21		X	H			
MTR	Unit Headquarters Disseminates Info to Unit	7-3/4-1237.22		X	H			
MTR	Process Call for Fire	7-3/4-1238		X	H			
MTR	Fire Hipshoot (Immediate Suppression/Smoke)	7-4-1211			N		X	
MTR	Fire Hipshoot (Adjust Fire)	7-4-1212			N		X	
MTR	Fire Direct Lay	7-4-1213			N		X	
MTR	Fire Direct Alignment	7-4-1214			N		X	
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Medical Platoon

Plt	Task Title (ARTEP 17-236-12-MTP)	Number	Selected VIR	Selected Live	BM	TA	NSS	NVTP
MED	Cross Chemically Contaminated Area	03-3-C010			N		X	
MED	Cross Radiologically Contaminated Area	03-3-C011			N		X	
MED	Operate in Smoke	03-3-C012			N		X	
MED	Prepare for Operations in NBC Environment	03-3-C013			N		X	
MED	Respond to NBC Attack	03-3-C016			N		X	
MED	Perform Decontamination	03-3-C017			N		X	
MED	Camouflage Vehicles & Equipment	05-3-C003			N		X	
MED	Secure & Defend Unit Position	07-3-C010			N		X	
MED	Maintain Medical Supplies & Equipment	08-3-0003			N		X	
MED	Disestablish Area	08-3-0045	X		N			
MED	Prepare for Medical Platoon Operations	08-4-0001		X	H			
MED	Develop Operational Plan	08-4-0001 1		X	H			
MED	Issue OPORD to Subordinates	08-4-0001 3		X	H			
MED	Provide Medical Staff Services	08-4-0002		X	M			
MED	Provide Info to Chain of Command	08-4-0002 2		X	H			
MED	Prepare for Evacuation Mission	08-4-0004		X	M			
MED	Prepare Strip Maps & Overlays	08-4-0004 2		X	P			
MED	Ambulance Section Process Evacuation Request	08-4-0004 5		X	P			
MED	Leader Briefs Ambulance Squad	08-4-0004 6	X		P			
MED	Ambulance Section NCO Dispatches Ambulances	08-4-0004 7	X		N			
MED	Squad Team Notifies Supported Unit of Status	08-4-0004 8	X		N			
MED	Perform Triage	08-4-0005			N	X		
MED	Prepare Patients for Evacuation	08-4-0006			N		X	
MED	Load Patients	08-4-0007			N		X	
MED	Provide Enroute Supportive Treatment	08-4-0008			N		X	
MED	Evacuate Chemical Contaminated Casualties	08-4-0009			N		X	
MED	Evacuate EPW Patients	08-4-0010			M	X		
MED	Unload Patients	08-4-0011			N		X	
MED	Transport Medical Supplies, Personnel, Messages	08-4-0012	X		N			
MED	Debrief Squad and Crews	08-4-0013		X	M			
MED	Update Situation Maps & Overlays	08-4-0013 2		X	M			
MED	Establish Treatment Area	08-4-0014	X		M			
MED	Coordinate Operational Sites	08-4-0014 1		X	H			
MED	Selects Operational Site	08-4-0014 2	X		H			
MED	Establishes BAS	08-4-0014 3	X		N			
MED	Establishes Ambulance Area	08-4-0014 4	X		N			
MED	Triage Patients	08-4-0015			N		X	
MED	Maintain Cardiopulmonary Function	08-4-0016			N		X	
MED	Control Hemorrhage and Bleeding	08-4-0017			N		X	
MED	Control Shock	08-4-0018			N		X	
MED	Apply Dressings, Bandages, Splints	08-4-0019			N		X	
MED	Initiate Control of Infection	08-4-0020			N		X	
MED	Control Severe Pain	08-4-0021			N		X	
MED	Perform Emergency Resuscitative Surgery	08-4-0022			N		X	
MED	Provide Continuing Care & Comfort	08-4-0023			N		X	
MED	Identify and Treat Heat Injuries	08-4-0024			N		X	
MED	Identify and Treat Cold Injuries	08-4-0025			N		X	
MED	Manage Combat Stress	08-4-0026			N		X	
MED	Treat Directed Energy Injuries	08-4-0027			N		X	
MED	Operate Special Medical Equipment	08-4-0028			N		X	
MED	Manage the Upper Airway	08-4-0029			N		X	
MED	Treat Shock	08-4-0030			N		X	
MED	Manage Thoracic Trauma	08-4-0031			N		X	
MED	Manage Head Trauma	08-4-0032			N		X	
MED	Manage Abdominal Trauma	08-4-0033			N		X	
MED	Manage Burns	08-4-0034			N		X	
MED	Manage Spine Trauma	08-4-0035			N		X	
MED	Establish Patient Decontamination - Integ Battlefield	08-4-0036			N		X	
MED	Assess Patients to Establish Priority of Treatment	08-4-0037			N		X	
MED	Decontaminate Ambulatory Patients	08-4-0038			N		X	
MED	Decontaminate Litter Patients	08-4-0039			N		X	
MED	Route and Move Patients Through M51 Shelter	08-4-0040			N		X	
MED	Treat Chemical Agent Casualties	08-4-0041			N		X	
MED	Treat Nuclear Casualties	08-4-0042			N		X	
MED	Treat Biological Agent Casualties	08-4-0043			N		X	
MED	Provide Sick Call Services	08-4-0044			N		X	
MED	Establish Single Channel Voice Radio	11-3-C007			M	X		
MED	Recognize ECM and Implement ECCM	11-3-C008			N		X	
MED	Employ COMSEC Measures	11-3-C009	X		P			
MED	Report Casualties	12-3-C005		X	H			
MED	Combat Battlefield Stress	12-3-C018			N			X
MED	Perform Personnel Consolidation and Reorg.	12-3-C019	X		P			
MED	Process Replacements	12-3-C020			N		X	
MED	Process EPWs	19-3-C004			N		X	
MED	Process Captured Documents & Equipment	19-3-C005			N		X	
MED	Employ Physical Security Measures	19-3-C006			N		X	
MED	Employ Information Security Measures	19-4-C006			N		X	
MED	Use Passive Air Defense Measures	44-3-C001			N		X	
MED	Take Active AD Measures Against Hostile Aircraft	44-3-C002			N		X	
MED	Prepare All Elements for Movement	55-3-C004			N		X	
MED	Conduct Medical Platoon Movement	55-3-C005	X		M			
MED	Perform Maintenance	91-3-C020			N		X	

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Plt	ARTEP 17-236-10-MTP Task Title	Number	Selected VIR	Selected Live	BM	Not Selected TA	Not Selected NSS	Not Selected NVTP
MAINT	Exchange MOPP Gear	03-3-C013			N		X	
MAINT	Camouflage Vehicles & Equipment	07-3-C003			N		X	
MAINT	Secure & Defend Unit Position	07-3-C010			N		X	
MAINT	Prepare for Nuclear Attack	07-3-C015			N		X	
MAINT	Establish Single Channel Voice Radio	11-3-C007			M		X	
MAINT	Combat Battlefield Stress	12-3-C018			N		X	
MAINT	Remove Casualty from Vehicle	17-3-1014			N		X	
MAINT	Conduct Smoke Operations	17-3-1018			N		X	
MAINT	Respond to Initial Effects of Nuclear Attack	17-3-1026			N		X	
MAINT	Prepare for Friendly Nuclear Attack	17-3-1028			N		X	
MAINT	Perform Radiological Decontamination	17-3-1029			N		X	
MAINT	Respond to Chemical Agent Attack	17-3-1031			N		X	
MAINT	Perform Chemical Decontamination	17-3-1032			N		X	
MAINT	Cross Radiologically Contaminated Area	17-3-1056			N		X	
MAINT	Cross Chemically Contaminated Area	17-3-1057			N		X	
MAINT	Select & Establish UMCP or Field Maintenance Site	17-3-1266	X		H			
MAINT	Platoon Leader Conducts Map Reconnaissance	17-3-1266.1		X	M			
MAINT	Platoon Leader Performs Ground Reconnaissance	17-3-1266.2	X		H			
MAINT	Platoon Leader Makes Site Selection	17-3-1266.3	X		M			
MAINT	Platoon Leader Develops Layout Plan	17-3-1266.4		X	N			
MAINT	Platoon Leader Develops a Traffic Plan	17-3-1266.5			N		X	
MAINT	Platoon Leader Develops Defense Plan	17-3-1266.6		X	M			
MAINT	Platoon Leader Organizes Maintenance Site	17-3-1266.7	X		H			
MAINT	Platoon Leader Establishes Maint Control System	17-3-1266.8		X	N			
MAINT	Maintain Account for Maintenance Equipment	17-3-1270			N		X	
MAINT	Perform Controlled Exchange	17-3-1277			M		X	
MAINT	Perform BDA	17-3-1279			M		X	
MAINT	Repair Unit Equipment	17-3-1280	X		N			
MAINT	Perform Emergency Destruction of Equipment	17-3-1282			N			
MAINT	Process Incoming Contaminated Equipment	17-3-1283			N			
MAINT	Provide On-Site Maintenance Support	17-3-1288			N			
MAINT	Plan a Recovery Mission	17-3-1289	X		M			
MAINT	Develop a Recovery Plan	17-3-1289.1		X	M			
MAINT	Platoon Leader Approves Recovery Plan	17-3-1289.2		X	P			
MAINT	Plan and Conduct Convoy	17-3-1300	X		H			
MAINT	Platoon Leader Conducts Map Recon	17-3-1300.1	X		P			
MAINT	Quartering Party Conducts Route Recon	17-3-1300.2	X		H			
MAINT	Convoy Crosses SP	17-3-1300.7	X		H			
MAINT	Convoy Arrives at RP	17-3-1300.14	X		H			
MAINT	Conduct Consolidation & Reorganization	17-3-1301	X		M			
MAINT	Perform Chemical Decontamination	17-3-1302			N		X	
MAINT	Operate in Urbanized Areas	17-3-1310			N		X	
MAINT	Conduct Precombat Inspections	17-3-1311			N		X	
MAINT	Perform Quartering Party Functions	17-3-1312			N		X	
MAINT	Prepare for Operations in NBC Environment	17-3-1313			N		X	
MAINT	Plan & Allocate Maintenance Support Requirements	17-4-1260		X	M			
MAINT	BMO Analyzes Units Mission & Tactical Situation	17-4-1260.1		X	M			
MAINT	BMO Arranges for MST	17-4-1260.3		X	N		X	
MAINT	BMO Coordinates with Support Maintenance	17-4-1260.4			N	X		
MAINT	BMO/BMT Coord w/BMO/BMT Attached Unit	17-4-1260.5			N		X	
MAINT	Conduct Transactions with Support Maintenance	17-4-1276			N			X
MAINT	Maintain PLL	17-4-1284			N		X	
MAINT	Tow Disabled Wheel Vehicle	17-4-1291			N		X	
MAINT	Tow Disabled Track Vehicle	17-4-1292			N		X	
MAINT	Upright Overturned Track Vehicle	17-4-1293			N		X	
MAINT	Recover Mired Wheel Vehicle	17-4-1294			N		X	
MAINT	Recover Mired Track Vehicle	17-4-1295			N		X	
MAINT	Upright Overturned Track Vehicle	17-4-1296			N		X	
MAINT	Provide Lift Support	17-4-1299			N		X	
MAINT	Process Enemy Prisoner of War	19-3-C004			N		X	
MAINT	Process Captured Enemy Documents & Equipment	19-3-C005			N		X	
MAINT	Employ Physical Security Measures	19-3-C006			N		X	
MAINT	Use Passive Air Defense Measures	44-3-C001			N		X	
MAINT	Take Active AD Measures Against Hostile Aircraft	44-3-C002			N		X	
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Plt	ARTEP 17-236-11-MTP Task Title	Number	Selected VIR	Selected Live	BM	Not Selected TA	Not Selected NSS	Not Selected NVTP
SPT	Prepare for Chemical Attack	03-3-C013			M		X	
SPT	Exchange MOPP Gear	03-3-C014			N		X	
SPT	Prepare for Nuclear Attack	03-3-C015			N		X	
SPT	Prepare for Operations in NBC Environment	03-3-C201			N		X	
SPT	Camouflage Vehicles & Equipment	07-3-C003			N		X	
SPT	Secure & Defend Unit Position	07-3-C010			N		X	
SPT	Evacuate Casualties	08-3-C002	X		N			
SPT	Process Replacements	12-3-C001			N		X	
SPT	Report Casualties	12-3-C005		X	H			
SPT	Combat Battlefield Stress	12-3-C018			N		X	
SPT	Perform Personnel Consolidation & Reorg	12-3-C019			P		X	
SPT	Load Supplies and Equipment	17-3-1004			N			
SPT	Perform Assembly Area Activities	17-3-1006			N		X	
SPT	Occupy Covered & Concealed Position	17-3-1008			M		X	
SPT	Operate in Urbanized Areas	17-3-1009			N		X	
SPT	Perform Operator Maintenance on Vehicle	17-3-1012			M	X		
SPT	Remove Casualty from Vehicle	17-3-1014			N		X	
SPT	Use Nonstandard Vehicle Evacuation Methods	17-3-1015			N		X	
SPT	Operate in Smoke	17-3-1018			M		X	
SPT	Establish Platoon Hot Loop	17-3-1020			N		X	
SPT	Establish Perimeter Security	17-3-1021			N		X	
SPT	Establish & Operate Observation Point	17-3-1034			N		X	
SPT	Provide Class III Resupply	17-3-1041	X		M			
SPT	Coordinates with S4 for Fuel Requirements	17-3-1041.1		X	H			
SPT	Resupplies Tank Platoon in Position	17-3-1041.4	X		P			
SPT	Provide Class V Resupply	17-3-1042	X		M			
SPT	Coordinates with S4 for Ammo Requirements	17-3-1042.1		X	H			
SPT	Resupplies Tank Platoon in Position	17-3-1042.4	X		M			
SPT	Establish Ammunition Prestock	17-3-1043	X		P			
SPT	Resupply Maneuver Units at Night	17-3-1044	X		M			
SPT	Support Relief in Place & Passage of Lines	17-3-1045	X		M			
SPT	Transport Cargo on Hard or Unimproved Road	17-3-1050			N	X		
SPT	Protect Cargo in Transit	17-3-1051			N	X		
SPT	Conduct Convoy Movement	17-3-1055	X		N			
SPT	Cross Radiologically Contaminated Area	17-3-1056			N		X	
SPT	Cross Chemically Contaminated Area	17-3-1057			N		X	
SPT	Defend Against Ground Atk (Road Not Blocked)	17-3-1059			N			X
SPT	Defend Against Ground Atk (Road Blocked)	17-3-1060			N			X
SPT	Reorganize After Attack	17-3-1062	X		N			
SPT	Receive & Store Rations	17-3-1065			N	X		
SPT	Relocate Field Kitchen	17-4-1063			N	X		
SPT	Set Up Field Kitchen	17-4-1064			N	X		
SPT	Provide Meals	17-4-1066			N		X	
SPT	Process Enemy Prisoners of War	19-3-C004			N		X	
SPT	Process Captured Documents & Equipment	19-3-C005			N		X	
SPT	Employ Physical Security Measures	19-3-C006			N		X	
SPT	Use Passive Air Defense Measures	44-3-C001			N		X	
SPT	Take Active AD Measures Against Hostile Aircraft	44-3-C002			N		X	
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APPENDIX B

TASK LISTS FOR MORTAR, MEDICAL, MAINTENANCE,

AND SUPPORT PLATOON EXPANSION

Department of the Army (1989). <u>Mission training plan for the infantry mortar platoon, section, and squad contents</u> (ARTEP 7-90-MTP). Washington, DC: Headquarters, Department of the Army.

Department of the Army (1988). <u>Mission training plan for the tank and mechanized infantry battalion task force</u> (ARTEP 71-2-MTP). Washington, DC: Headquarters, Department of the Army.

Department of the Army (1987). <u>Mission training plan for the task force medical platoon</u> (ARTEP 17-236-12-MTP). Washington, DC: Headquarters, Department of the Army.

Department of the Army (1987). <u>Mission training plan for the task force maintenance platoon</u> (ARTEP 17-236-10-MTP). Washington, DC: Headquarters, Department of the Army.

Department of the Army (1987). <u>Mission training plan for the task force support platoon</u> (ARTEP 17-236-11-MTP). Washington, DC: Headquarters, Department of the Army.

Mortar Platoon Tasks and Subtasks

Consolidated Task List

(ARTEP 7-90-MTP & ARTEP 71-2-MTP)

(ARTEP 7-90-MTP)

Displace by Echelon (#7-3/4-1201)

1201.1	The senior leader establishes the displacement plan.

Operate by Split Platoon/Section (#7-3/4-1202)

1202.3	The section or platoon leader controls both squads or sections.

Occupy a Firing Position (#7-3/4-1203)

1203.1	The mortar unit leader plans for a mortar firing position.
1203.2	The mortar unit leader--
1203.2a	Halts the unit 200 to 400 meters from the tentative mortar firing position.
1203.2b	Confirms the mortar firing position.
1203.2c	Conducts a reconnaissance and confirms the location of the mortar firing position.
1203.2e	Designates the center of the base as the command post (CP) and designates mortar firing positions upon arrival.
1203.7	The fire direction center (FDC) prepares to receive calls for fire.

Operate a Firing Direction Center (#7-3/4-1227)

Reconnoiter a Firing Position (#7-3/4-1228)

1228.1	Leader performs map reconnaissance and plans ground reconnaissance.
1228.2	The mortar unit reconnoiters the route to the firing position.
1228.3	The mortar unit reconnoiters and selects the firing position.

Sustain (#7-3/4-1233)

1233.1	The mortar unit submits status reports.
1233.2	The mortar unit leader anticipates resupply needs and ensures that resupply and maintenance requests are submitted early to avoid problems that might affect the mission.
1233.3	The senior Noncommissioned Officer (NCO) ensures required basic load, supplies, and unit operational equipment are on hand.
1233.6	All leaders know the locations of combat trains and field trains.
1233.7	Leaders submit support requests.

Consolidate and Reorganize (#7-3/4-1236)

1236.5	The mortar unit leader assigns or reassigns temporary sectors of fire to all squads.
1236.8	The mortar unit reestablishes the chain of command and communication nets.
1236.12	The mortar unit leader reports status of and requests replacement for personnel, weapons, ammunition, and equipment.
1236.13	The mortar unit leader requests repair or replacement of vehicles and reports status of vehicle evacuation.
1236.14	The unit leader collects and disseminates information about the completed operation.

Plan and Control Combat Operations (#7-3/4-1237)

1237.17	The mortar unit leader issues orders or modifies his original plan. The leader must explain the order or change.
1237.18	The mortar unit leader issues fragmentary orders (FRAGOs) to the unit.
1237.19	The mortar unit responds to a fire request from higher headquarters.
1237.20	The mortar unit coordinates actions with friendly units during the operation.
1237.21	The mortar unit headquarters reports combat critical information to higher, adjacent, and supporting units.
1237.22	The mortar unit headquarters disseminates information to the unit.

Process Call for Fire (#7-3/4-1238)

Employ Fire Support (#7-1-3907)

      3907.3   Fire Support Section (FSS) and Task Force (TF) leaders coordinate fire support.

Operate Fire Support Section Operations (#7-1-3908)

      3908.5b   Fire Support Officer (FSO) and FSS coordinate the fire support plan before the battle. The mortar platoon, brigade Fire Support Element (FSE), and Direct Support Field Artillery (DS FA) battalion have copies of the TF fire plan before the start of the operation with enough time to perform necessary planning/coordination.

Medical Platoon Tasks and Subtasks

Consolidated Task List

(ARTEP 17-236-12-MTP)

Prepare for Medical Platoon Operations (#08-4-0001)

0001.1	Platoon leader (physician) and medical operations officer develop tentative operational plan.
0001.3	Platoon leader (physician) or medical operations officer issues operation order (OPORD) to subordinates.

Prepare for Evacuation Mission (#08-4-0004)

0004.2	Medical operations officer and ambulance section sergeant portray information on strip maps or map overlays.
0004.5	Ambulance section members receive and process evacuation request.
0004.6	Leader briefs ambulance squad.
0004.7	Ambulance section NCO dispatches ambulances.
0004.8	Squad team notifies supported unit of status.

Establish Treatment Area (#08-4-0014)

0014.1	Medical operations officer coordinates operational sites.
0014.2	Platoon leader (physician) or physician assistant (PA) selects operational site.
0014.3	Treatment section establishes Battalion Aid Station (BAS).
0014.4	Ambulance section establishes ambulance area.

Report Casualties (#12-3-C005)

Perform Personnel Consolidation and Reorganization (#12-3-C019)

Conduct Medical Platoon Movement (#55-3-C005)

Perform Combat Service Support Operations (#7-1-3912)

3912.1	Leaders and staff provide the TF commander with a combat service support (CSS) estimate and update him on the combat status.
3912.2	TF commander and staff plan and coordinate CSS.
3912.8	TF cares for, evacuates, and reports all casualties
3912.9	TF aid station coordinates medical activities.

Operate Combat Trains CP (#7-1-3913)

3913.8	CP staff and aid station coordinate medical evacuation.

Treat and Evacuate Casualties (#7-1-3033)

Maintenance Platoon Tasks and Subtasks

Consolidated Task List

(ARTEP 17-236-10-MTP & ARTEP 71-2-MTP)

(ARTEP 17-236-10-MTP)

Select and Establish UMCP or Field Maintenance Sites (#17-3-1266)

1266.1	Platoon leader performs map reconnaissance.
1266.2	Platoon leader performs ground reconnaissance.
1266.3	Platoon leader makes site selection.
1266.4	Platoon leader develops the layout plan.
1266.6	Platoon leader develops a defense plan.
1266.7	Platoon leader organizes maintenance site.
1266.8	Platoon leader establishes maintenance control system.

Perform Battle Damage Assessment (#17-3-1279)

Repair Unit Equipment (#17-3-1280)

Plan a Recovery Mission (#17-3-1289)

1289.1	Team chief develops a recovery plan.
1289.2	Platoon leader approves and coordinates the recovery plan.

Plan and Conduct a Convoy (#17-3-1300)

1300.1	Platoon leader conducts map reconnaissance.
1300.2	Quartering party conducts route reconnaissance.
1300.7	Convoy crosses start point (SP).
1300.14	Convoy arrives at release point (RP).

Plan and Allocate Maintenance Support Requirements (#17-4-1260)

1260.1	Battalion maintenance officer (BMO) analyzes the unit's mission and current tactical situation.
1260.3	BMO arranges for maintenance support team (MST).

Perform Combat Service Support Operations (#7-1-3912)

3912.2	TF commander and staff plan and coordinate CSS.
3912.6	TF recovers, repairs, and returns nonmission-capable equipment.

Support Platoon Tasks and Subtasks

Consolidated Task List

(ARTEP 17-236-11-MTP & ARTEP 71-2 MTP)

ARTEP 17-236-11-MTP

Evacuate Casualties (#08-3-C002)

Report Casualties (#12-3-C005)

Provide Class III Resupply (#17-3-1041)

1041.1	The platoon leader, platoon sergeant, transportation section sergeant, or petroleum, oils or lubricants (POL) section chief will coordinate with the battalion S4 for fuel requirements.
1041.4	POL section resupplies tank platoon in position (tailgate method).

Provide Class V Resupply (#17-3-1042)

1042.1	The platoon leader, platoon sergeant, or transportation and ammunition section sergeant coordinates with the battalion S4 for ammunition requirements.
1042.4	Transportation section resupplies the tank platoon in position (tailgate method).

Establish Ammunition Prestock (#17-3-1043)

Conduct a Convoy Movement (#17-3-1055)

Reorganize After the Attack (#17-3-1062)

Reorganize (#7-1-3022)

3022.1c TF coordinates the reorganization. Movement and
linkup locations of resupply and evacuation are provided
by the combat trains CP to all elements.

Perform Combat Service Support Operations (#7-1-3912)

3912.3e TF performs supply operations from the field train
(LOGPACs) and combat trains. Mission (command)
supplies are delivered in accordance with (IAW) commander's
directions (distribution of barrier material to unit directed to
emplace obstacle).

3912.10 Perform LOGPAC operations.

APPENDIX C

MODSAF ACTIONS FOR CS AND CSS SIMULATION

The following chart provides guidance for the ModSAF operators at the **Fire Support** workstation. Words in **Bold** indicate ModSAF menu items to utilize.

Phase	Event	Action
1	TF moves to LD.	• Mortars move by executing from the **On Order** menu. • Adjusts speed by using the **Unit Icon** menu. • Responds to instructions from mortar plt ldr/sgt. • Moves ModSAF mortar plt elements. • Responds to requests for fire.
1	Lead TF element crosses LD, moves on AXIS WEASEL.	• Mortars will move in the Bn/TF center behind Co/Tm A. • Adjusts speed using the **Unit Icon** menu. • Responds to instructions from mortar plt ldr/sgt. • Moves ModSAF mortar plt elements. • Responds to requests for fire.
2	PL PORTLAND.	• Mortars occupy firing positions. • Responds to instructions from mortar plt ldr/sgt. • Moves ModSAF mortar plt elements. • Responds to requests for fire.
3	PL PHOENIX.	• Responds to instructions from mortar plt ldr/sgt. • Moves ModSAF mortar plt elements. • Responds to requests for fire. • EC, as mortar squads, report ammo shortages.
4	Reorganize on objective.	• Mortars occupy positions near PL QUINCY. • Responds to instructions from mortar plt ldr/sgt. • Moves ModSAF mortar plt elements. • Responds to requests for fire.

The following chart provides guidance for the ModSAF operator at the **CSS** (battalion/task force combat and field trains) workstation. Words in **Bold** indicate ModSAF menu items to utilize.

Phase	Event	Action
1	TF moves to LD.	• Trains will probably not move prior to LD.
1	Lead TF element crosses LD, moves on AXIS WEASEL.	• Trains may move **On Order** at this time. • Adjust a route if necessary by clicking on it, then dragging points to a new location. Click **Done** in the Edit Window to activate the new route. • Adjust speed using the **Unit Icon** menu.
2	PL PORTLAND.	• Trains elements should be 3km - 4km behind Bn/TF elements in contact. • Adjust activity by using the **Unit Icon** menu.
3	PL PHOENIX.	• Trains halt to the rear of TF combat elements.
3	PL AUSTIN.	• Trains stay 3km - 4 km behind combat elements. • Adjust activity using the **Unit Icon** menu.
4	Reorganize on BPs.	• Trains move **On Order** on routes to designated positions.

APPENDIX D

Detailed Corrective Feedback from Exercise Rehearsal and Trials[1]

Event	Training Component	Observation/Comment	Action/Response
O/C and EC rehearsal:	Mortar Platoon	Mortars can be run from a different workstation than fire support	If available, separating the two may reduce the workload on the EC. An attempt was made to investigate this during unit trials, but was not successful due to O/C team resource limits.
Movement to contact		Battalion and mortar platoon orders do not match	Mortar platoon order was changed to reflect the same information that was in the battalion order.
		No UBL for mortars	Mortar platoon order was corrected to reflect UBL.
	Medical Platoon	Medical Platoon Leader or Operations Sergeant do not need to be in simulators; they do not necessarily need to see battlefield	Continued to evaluate during trials.
		If company medics were in manned simulators, actual evacuation of casualties could be practiced	This is beyond the scope of this effort. However, if sufficient O/C and MWSTC resources were available, this might be useful addition to the training.
	Maintenance Platoon	Ensure reorganization phase takes place	Units should be encouraged by the O/Cs to proceed with the mission through consolidation to execute battalion maintenance officer functions. TSP materials do not need to be changed.

(table continues)

[1] The purpose of this table is to document specific details of the feedback gained during exercise rehearsal and trials. The information is most meaningful to those familiar with ModSAF and the SIMUTA exercises.

Event	Training Component	Observation/Comment	Action/Response
Movement to contact (cont'd)	Support Platoon	Initial position of support platoon is in front of B Company	Initial starting positions are restricted by SIMNET terrain base limitations. Placement is further forward than usual, but to the south and out of the way of B Company.
	Company First Sergeants	Company 1SGs should operate in simulators	Although there is a resource limitation, we planned to test this further during the trials. The test was not undertaken, as O/Cs and 1SGs chose to stay at the company ModSAF workstations.
		Add field trains command post	This seems beyond the limits and intent of this expansion, but the recommendation is noted for future consideration. Even then, because of terrain limitation, the field trains would have to be notional and would require creative design to be realistically linked to the exercise.
		Add company level tables with CSS to the VTP library	Again, this is beyond the scope work, but the recommendation is noted for future consideration.
		Use one icon for company trains	This can not be done in ModSAF; individual icons are required in order for the vehicles to perform their CSS functions.
		Company trains should be with companies instead of in BSA	Trains were moved as close to units as simulation data base will allow.
	General	Task organization in brigade and battalion orders do not match	A battalion FRAGO will be prepared to correct the task organization.
		Add CSS graphics east of existing graphing	These were added although they were off of the SIMNET maps. (See below.)
		R & S plan should include more scouts	Modifying the basic order is out of scope and may not be advisable in a SIMNET exercise.

(table continues)

D–2

Event	Training Component	Observation/Comment	Action/Response
Movement to contact (cont'd)	General (cont'd)	Add control measure between HANCOCK and PORTLAND	Modifying the basic order is out of scope, however, we received approval to make this change. We wrote a FRAGO to add a phase line and added it to the graphics.
		COLTs are not in Battalion order but are in other materials	References to COLTs were removed.
		Add attack position	Modifying the basic order is out of scope.
Unit Trial – November 8, 1996	Mortar Platoon	Control Combat Operations (Task 7-3/4-1237, subtask 16) should be added	This task was added.
		Additional radios are needed to support FDC	No MWSTC radio nets are available. Volume II instructs units to bring extra radios.
		Mortar platoon should be run from a separate workstation	This should be the design if resources allow.
		The unit did not bring enough people	Volume II indicates manning requirements. However, those that did participate benefited. (See unit feedback section.)
	Medical Platoon	Add an AXP to order and graphic	AXP will be added by a FRAGO.
	Maintenance Platoon	No corrective feedback	
	Support Platoon	The total number of platoon vehicles needs to be in the order	This was added.
		Location of A/FSB needs to be added to paragraph 4 of Service Support	This was added.

(table continues)

Event	Training Component	Observation/Comment	Action/Response
Unit Trial – November 8, 1996 (cont'd)	Company First Sergeants	1SGs should be in manned simulators in order to move about the battlefield	Operating in manned simulations may give 1SGs a more realistic view of the battlefield, but they can still practice their reporting and coordination of assets from the ModSAF station. The availability of simulators and crews for the 1SGs is a limitation. The availability of reconfigurable simulators in the future may be helpful.
		Need to include communications with field trains CPs which would require additional messages and another HACC-C member	Interaction with the FSB would be a higher priority. However, neither are feasible with current resources, nor are they totally necessary for the SIMUTA-B exercise concept. As a partial solution, some additional radio traffic was added to HACC-C mission events list.
		Add an option to use MILES cards instead of prepared casualty list	This is possible, but not entirely advisable. The prepared list allows the CSS O/C to monitor the correctness of the reporting that reaches the CTCP. MILES cards could force the involvement of platoon members in reporting casualties to their platoon sergeants who, in turn, would report to the company 1SGs. However, because SIMNET results in so many catastrophic kills, crews will not be able to report their MILES card designated injuries. The prepared list avoids this problem. Another option bridges the two: produce Battle Loss Roster in MILE-like cards (or paper strips) for distribution to crews.
		Instructions concerning use of Battle Loss Roster were unclear	Added instructions to O/Cs to assess casualties upon vehicle hits. Moved Battle Loss Roster with injuries to Volume I of the TSP. Retained BBS casualty numbers for use in future STOW linkages with BBS and Janus.

(table continues)

Event	Training Component	Observation/Comment	Action/Response
Unit Trial – November 8, 1996 (cont'd)	Company First Sergeants (cont'd)	Two ModSAF functions do not operate correctly: towing a manned simulator and "service station"	Added instructions for EC for how to handle these tasks.
	CSS AAR	Having one O/C allowed the AAR to focus on the interaction of CSS parts. For more in-depth coverage of CSS platoons, additional O/Cs and supporting materials (e.g., event matrices) are needed	The statement is correct. The addition of O/Cs (which would require additional personnel for the O/C team) and the expansion of the exercise to platoon level feedback entails a policy decision that is not within the scope of this effort.
	General	The exercise needs more adjacent unit message traffic	CSS traffic was increased.
		Brigade and battalion order do not match re: task organization, intelligence, and WSRO	FRAGOs were prepared to align task organizations. WSRO is not any of the orders. Nor is it needed in these execution only scenarios. Intelligence is out of scope for this project.
		The exercise should be front-loaded with more CSS play at the beginning of the exercise. That is, begin with some decrements that need to be attended to early	This comment is not appropriate for the movement to contact scenario, but is for the deliberate attack and area defense. The battalion does not start at full strength in either of these missions.
		The order was not built for CSS practice	True. CSS is an optional add-on. The exercise remains a maneuver exercise, and only CSS tasks during the execution phase are covered.

(table continues)

Event	Training Component	Observation/Comment	Action/Response
Unit Trial – November 8, 1996 (cont'd)	General (cont'd)	ModSAF does not completely support all of the CSS tasks designated for the exercise	The introduction of new versions of ModSAF is always a learning experience which often entails surprises. Generally, part of the difficulty is operator experience and part of the problem is ModSAF itself. It takes time and experience to sort out which is which. ModSAF 2.1 is needed for OPFOR functions, so avoiding its use is not possible. On the other hand, older versions of ModSAF (1.0 and 1.5.a) can be used at workstations without the need for these functions. Also, there are two ModSAF tasks, "towing" and "resupply," that need additional explanation which will be added to the EC section of Volume I.
		ModSAF workstations drop off the system when overloaded	Particularly in the complex terrain in the north, the system can inadvertently be overloaded. Entity counts must be carefully monitored to avoid workstation crashes. Entity specifications will also be reviewed to balance realistic play with system capabilities.
		EC workload at CSS workstation is an issue	This issue involves four interrelated topics: • Experience • ModSAF capabilities • Number of persons at the workstation • Communication requirements. EC familiarity with the specific version of ModSAF must be an assumption for TSP development. However, additional document of several "quirks" of the system was prepared. Distractions may be reduced by moving some of the participants (see below). Finally, O/Cs should assist ECs to ensure that CSS events that are simulated by ModSAF are reported as needed to participants.

(table continues)

Event	Training Component	Observation/Comment	Action/Response
Unit Trial – November 8, 1996 (cont'd)	General (cont'd)	Another location is needed for CSS platoon leaders to operate in rather than at workstation	O/Cs will acquire use of one of the metal buildings behind the main MWSTC building. Leaders, however, will lose any ability to see the battlefield.
		Need company tables that include 1SG practice	This is a repeat of the comment recorded during the rehearsal. It is a good idea that is out of scope for this effort.
		At the start of the exercise, D Company cannot see A Company	Unit placements further be reviewed in light of all of the CSS vehicles present and considered to be adequate.
		There is a tension between unit SOP and details in the orders	This has been an issue since the beginning of SIMUTA. So far, it is a cost of turn-key training. However, we have attempted to create products that are flexible.
Unit Trial -- Nov 18 - 25	Mortar Platoon	Location platoon leader and platoon sergeant is ambiguous	Doctrine is not clear about the location of the platoon leader and platoon sergeant. Conferred with training participants and O/Cs and decided they could be in the FDC or in a HMMWV. Therefore, TSP revised to allow them at a work area simulating the FDC or in an available manned simulator.
		Mortar platoon leader can see the Plan View Display which, by showing enemy locations, giving the platoon leader too much information	Recommended some rearrangement of workstation area by placing a room divider between workstation and the training participant.
		Mortar vehicles did not match units vehicles	This is a ModSAF limitation, which unfortunately decreases the speed and lethality of the mortars. (Another problem with the speed of the vehicles that are available was resolved.)

(table continues)

Event	Training Component	Observation/Comment	Action/Response
Unit Trial – Nov 18 - 25 (cont'd)	Mortar Platoon (cont'd)	Combining fire support and mortar at same workstation puts an additional burden on the EC	A separate workstation was available for this exercise, but was not used. As indicated above, when resources allow it, mortar and fire support operations may be better served by using separate workstations.
	Medical Platoon	The unit would have liked to have used their own MTOE line numbers for casualty reporting	These will vary by unit, but the Battle Loss Roster was modified with blank lines for the unit to add these or other unit indicators.
		During the exercise, medical assets came under direct fire without being detected by the EC or medical platoon representative	This is example of the kind of thing the EC must monitor and communicate to the training audience. This is an additional duty for the ECs.
	Maintenance Platoon	[The BMO did not participate]	
	Support Platoon	Unless the exercise continues into the consolidation and reorganization phase of the mission, the support platoon leader's activities are limited	The length of the exercise is under the control of the unit and the O/C team. They must consider the trade-off in training value of continuing versus moving on to the schedule of AARs.
		The support platoon leader did not have accurate vehicle and cargo data	A complete list of all of the platoon vehicles and cargo was added to Volume II.
		There may be an error on the number of rounds carried on the emergency resupply HEMMT	The ModSAF data was corrected to match vehicle and cargo list.
		The CL V LOGPACs should vary by mission.	This is correct, although the difference would have a minimal impact on these execution exercises. For simplicity, the LOGPAC are the same of all missions.

(table continues)

Event	Training Component	Observation/Comment	Action/Response
Unit Trial – Nov 18 - 25 (cont'd)	Support Platoon (cont'd)	A forward logistics element from the 21 FSB is needed to support consolidation after the MTC and DATK missions	This was added with another FRAGO to the battalion order.
	Company 1SGs	The 1SGs need to attend two AARs (company and CSS) that occur simultaneously	See Unit B's suggestion for staggering the end of the exercise and the beginning of AARs.
	CSS AAR	One O/C may not be able to cover all CSS functions	The O/C did an excellent job during the AAR of discussing the integration of the battalion's CSS functions. He is, however, stretched thin in terms of coaching during the exercise. Additional O/Cs could certainly provide more coverage of and feedback to the CSS participants. The program, as required however, is design to fit within current O/C team staffing.
	General	With the addition of new CSS and ModSAF duties, the ECs could use as much support as possible	Recommended TSP additions include: * A consolidated listing of ModSAF problems and recommended solutions * ModSAF ammunition matrix with a listing of effects * Vehicle matrices with cargoes * Master scenario matrix In addition, ECs will evolve the balance in workload between the two CSS workstations. (Note: The datalogger at the CSS workstation is use as a second ModSAF station.)

(table continues)

Event	Training Component	Observation/Comment	Action/Response
Unit Trial – Nov 18 - 25 (cont'd)	General (cont'd)	There is not enough communication with the brigade (e.g., brigade S-4, FSB)	Scripted messages and instructions for HACC-C were reviewed. One message each added for medical, maintenance, and support platoons. During execution, CSS traffic should be primarily bottom up rather than top down.
		Portraying the BSA at the doctrinal distance behind the unit places it off the SIMNET map	The special SIMNET maps represent only the virtual world. Options for producing an extension of the map need to be explored so the unit can more readily track the locations of all of its assets.

APPENDIX E

Summary of Interview Feedback from Training Participants

Note: Because of time constraints not all of the questions were addressed by Unit B.

Question	Paraphrased Responses	Comment
Relative to the time spent, how much did you get out of this exercise compared to other exercises?	**Unit A** Beneficial as staff coordination exercise. Execution-only limits the amount of CSS play; however, they were able to bring CSS into exercise. The CTCP was more involved in the exercise. Company 1SGs were involved in the communications. The exercise simulated real and spontaneous events. The exercise is comparable to a BBS exercise but does have additional echelons playing CSS which increases the realism over BBS printouts. The exercise was estimated to include 60 to 70% of the CSS actions required at NTC. Would have liked to have spent more time on the exercise. Would have liked to have it expanded to include medical Forward Aid Station and Main Aid Station. **Unit B** Compared to previous SIMNET exercises, the addition of CSS play is moving in the right direction. Was able to practice reporting, which stresses the CSS system that otherwise would have just sat there. Had to practice radio net discipline. The visual effects of SIMNET hit home more than the printout of BBS. For example, company 1SGs can see the battlefield. The first time in a long time that the CSS system has been stressed. Should do the CSS component whenever time and personnel are available. Having CCS vehicles represented on the battlefield affected tactical movement and therefore, helped the unit to understand what happens when everything is brought together. Radio net discipline became even more important with the additional CSS traffic. Company 1SGs encounter a task they had never experienced before: recovering personnel and vehicles in a minefield.	The consolidation/ reorganization phase was cut short in order to repeat the exercise. (See Unit B's suggestion on AAR scheduling, below.)

(table continues)

Question	Paraphrased Responses	Comment
Describe the coaching you received during the exercise. Was the O/C able to assist you without interfering?	Unit A For experienced personnel, having only one CSS O/C covering medical, maintenance, and support platoons was adequate. O/C coverage needs to be sufficient for training participants to be coached in how the training system works (game rules) and in how to perform doctrinally. Number of O/Cs needed depends upon the CSS experience level.	
Describe how well your tasks were covered in the AAR? Did you receive enough feedback to perform more effectively if you had a chance to do this exercise again? What could improve the AARs?	Unit A AAR covered the coordination of S1, S4, BMO, acting Medical Platoon leader, and support platoon leader. Additional O/Cs would be needed to cover in any detail the actions of each platoon.	The program was designed to cover staff interactions not platoon level activities. Each participant did get a chance to participate in the AAR and, at the end of the AAR, each person described areas to sustain and to improve.
Describe how well the EC was able to monitor the actions of your platoon & company assets.	Training of the EC is critical. One of the ECs was new and had some problems controlling ModSAF entities.	Practice with new versions for ModSAF will improve efficiency. The impact of ModSAF CSS inexperience was not significant for the exercise. Instant movement by platoons is not realistic.
Would you recommend that a similar exercise be included in next year's training plan?	Unit A The unit was not sure it would bring the task force back. Would recommend coming back (to Fort Knox) as companies on Platoon Gunnery Trainer (PGT) rather not for task force training. They indicated that the simulators were old with a level of sophistication below current computer-based games. However, if they were to come back, they would bring their CSS personnel. Unit B This unit has already scheduled to return next year.	

<div align="right">*(table continues)*</div>

Question	Paraphrased Responses	Comment
What improvements can we make?	**Unit A**	
	The BMO would prefer to work out of his own station. He felt hampered by the other platoons.	
	In general, doubling up on ModSAF stations was not viewed as the best solution. They would rather have their personnel, as appropriate (support platoon leader, company 1SGs, medic), working in manned simulators or at least at separate stations with maps and radios	Separate work areas would not have to have ModSAF capability.
	Extra ModSAF 97 features for CSS play would be valuable for training only if additional CSS personnel were included in the training.	
	The CSS components should be added to the SIMUTA platoon and company tables to ramp up CSS training to battalion exercise.	
	More CSS play, even down to the combat vehicle crew level, would enhance the exercise as a preparation for NTC. For example, crews should begin their own casualty assessment and reporting through platoon sergeants to company 1SGs, and on up.	
	The 1SGs would like their own workstations with radios and headsets	
	The BMO would bring two assistants if he had his own station.	
	It would be good to have a workstation for each specialty platoon.	
	In general, they viewed the exercise as part of their NTC preparation, and would prefer more CSS play than the exercise is designed for. For example, they would like to include company medics in the exercise.	
	Unit B	The basic design does call for complete platoons to participate.
	It would be have been valuable to have had platoon sergeants in the exercise to report casualties and vehicle damage to the company 1SGs.	
	Again, CSS components should be added to the SIMUTA platoon and company tables to ramp up CSS training to battalion exercise.	
	In order to increase the amount of CSS play, stagger the end of the exercise. Release tank crew to AARs while continuing to play CSS. Then release company 1SGs to company AARs, still continuing CSS processes. Finally, end the exercise and conduct CSS AARs, with company 1SGs included.	
	Company 1SGs and medics could be in simulators.	This is a valid resource issue.
	Company 1SGs need two radios.	
	Do not run artillery and mortars from the same workstation.	

APPENDIX F

Summary of Unit Questionnaire Responses

Notes: Some items use a five point agree/disagree rating scale with three being a "neutral" midpoint. Other items use specially worded five point scales. Median responses for these items are reported in *italics* unless results are split. Then, the split is reported.

Both units completed questionnaires after the movement to contact exercise.

Unit B completed an addendum to the question after their deliberate attack mission which repeated a subset of the questions.

<u>Responses to Movement to Contact Questionnaire (both units)</u>

1. Number of questionnaires received: 12

2. Amount of time spent preparing for the exercise: 3 to 8 hours, median 5 hours.

3. Were maps available: 12 Yes responses

4. The platoon order was clear: *Agree*

5. The platoon order was tactically acceptable: *Agree*

6. The platoon order contained all of the necessary information...: *Agree*

7. The platoon order supported platoon mission execution: *Agree*

8. The platoon order supported battalion mission execution: *Agree*

9. The platoon order is NOT needed: *Disagree* to *Strongly disagree*

10. How can platoon order be improved:
    a. Increase support platoon rounds hauled
    b. If time is available, set [ModSAF] configuration to unit SOP
    c. Need more information in order [unspecified]

11. Did you need written information describing your role in the exercise: *Four Yes; Seven No.*
    a. For the four "Yeses," all responded that the information was clear.

12. Did you get a task list describing what you would be expected to do: *Three yes; Eight No.*
    a. For the three "Yeses," all responded that they reviewed that task list prior to the exercise.

13. The tasks accurately describe the actions of my platoon during this exercise: *Agree*
    a. Are there tasks you would add: *Two yes; six no.*
    b. Suggested additions: Set-up commo nets; companies should receive LOGPAC in assembly areas; add tasks to medical evacuation.
    c. Are there tasks you would delete: *Zero yes; Seven No.*

14. Is there anything ...that needs more explanation in the material....: *Four Yes; Two No.*
    a. Material were not distributed
    b. More explanation of ModSAF implementation of CSS vehicles.

15. The difficulty level of the CSS requirements during the exercise was...: *About right.*

16. The exercise made us focus on ARTEP-MTP task performance: *Moderate extent.*

17. The execution time was...: *Too Short* to *About right.*

18. More time should be spent in consolidation and reorganization: *Strongly agree.*

19. Radio traffic was realistic: *Agree.*

20. My platoon needs more nets to operate: Split – *Disagree* and *Strongly Agree.*

21. The AAR focused on the performance of my critical tasks and subtasks: *Agree.*

22. The AAR helped me understand how to perform more effectively: *Agree.*

23. My participation in this exercise was well worth the time spent: *Agree* to *Strong Agree.*

24. The exercise provided enough activity to keep me actively engaged: *Neutral* to *Agree.*

25. SIMNET provided sufficient events to trigger my activities: *Agree.*

Items 26 and 27 were answered on a seven point scale, anchored at the ends as 1, "Not proficient," and 7, "Extremely proficient."

26. Before the exercise, how proficient were you on the task included in the exercise. Median: *Five.*

27. How proficient are you now, after the exercise and AARs? Median: *Six.*

28. Describe the three or four most significant tasks you were able to practice during the exercise:
    a. Maintenance recovery operations
    b. Battle tracking and reporting
    c. Request medivac, mass evac, and logistical support
    d. Control movement on the battlefield
    e. Logistics planning
    f. Reporting
    g. Coordinating with CTCP
    h. Operate FDC
    i. Operate mortars as split section
    j. Process calls for fire

29. Should training participants be expanded for your platoon? *Eight Yes; Four No.*

30. Suggested additions (Responses reported include only those not on the suggested manning in the TSP.)
    a. Company Medics
    b. Company maintenance chiefs
    c. Support platoon NCOIC of emergency supply element
    d. Mortar section sergeants
    e. Field trains commander

31. How could we improve the exercise?
    a. Improve evacuation processing
    b. Put CSS representatives at separate workstations

c. Expand exercise to include maintenance tasks, reconstitution of crews, and leveling of parts
d. Add consolidation/reorganization time
e. Put mortar platoon leader and platoon sergeant in simulators; put section sergeants and FDC at a ModSAF workstation.

32. Mortar Platoon special questions:

a. Were you able to determine corrections to firing data from MET messages: *Did not receive any.*
b. Where would you prefer to operate? *At a ModSAF workstation.*
c. Was the fire support overlay (1) helpful, (2) accurate, (3)complete: *Neutral/Agree* on all three.
d. How could the overlay be improved: "It was fine"
e. Other comments:
   (1) Need key players
   (2) Add smoke missions
   (3) Increase range and speed of vehicle
   (4) Change to 120mm ammunition
   (5) Add night missions
   (6) Make .50cal operational

33. Medical platoon special questions:
a. There were enough casualties to cause me to perform my leader tasks: *Strongly agree*
b. The exercise provided opportunities to coordinate with:
   (1) CTCP: *Agree/Strongly Agree*
   (2) Main CP: No response/*Neutral*
   (3) Company 1SGs: *Agree/Strongly Agree*
c. Is the interaction with Charlie Company/Forward Support Battalion necessary: *Yes*
d. Was the fire support overlay (1) helpful, (2) accurate, (3)complete: *Agree/Strongly agree* on all three.
e. How could the overlay be improved: "Do not clutter it up"
f. Other comments:
   (1) Need more CSS players

34. Maintenance platoon special questions:
a. There were enough vehicle repairs to cause me to perform my leader tasks: *Strongly disagree/disagree*
b. Should the exercise be decremented at the start to provide additional repair needs: *Yes*
c. The exercise provided opportunities to coordinate with:
   (1) CTCP: *Agree/Strongly agree*
   (2) Main CP: *Agree/Strongly agree*
   (3) Company 1SGs: *Disagree*
d. Was the fire support overlay (1) helpful, *Agree;* (2) accurate, *Disagree/Agree,* (3) complete: *Strongly disagree/disagree*
   (1) Allow logistician to make CSS overlay and have it on a computer screen
   (2) Key check points were left off the overlay
e. Other comments:
   (1) 1SGs need to talk to UMCP

(2) Exercise needs to be longer.

35. Support platoon special questions:
    a. There were enough resupply needs to cause me to perform my leader tasks: *Disagree*
    b. Did any Class III resupply take place: *No*
    c. Did any Class V resupply take place: *No*
    d. Should basic loads be decremented at the start of the exercise to provide additional resupply: *Yes*
    e. Is the interaction with Alpha Company/Forward Support Battalion necessary: *Yes*
    f. The exercise provided opportunities to coordinate with:
       (1) CTCP: *Agree*
       (2) Main CP: *Disagree/Agree*
       (3) Company 1SGs: *Agree*
    g. Was the fire support overlay (1) helpful, (2) accurate, (3)complete: *Agree* on all three
    h. How could the overlay be improved:
       (1) Allow the S-4 to plan battalion assets.
       (2) Only the BSA and boundaries need to be on the graphics
       (3) CSS and maneuver check points should be the same.
    i. Outstanding resource.
    j. Other comments:
       (1) Make radios a separate element.

36. Company 1SG special questions:
    a. There were enough resupply needs to cause me to perform my leader tasks: *Disagree*
    b. Did any Class III resupply take place: *No*
    c. Did any Class V resupply take place: *No*
    d. Should basic loads be decremented at the start of the exercise to provide additional resupply: *Yes*
    e. There were enough vehicle repairs to cause me to perform my leader tasks: D*isagree/neutral*
    f. Should the exercise be decremented at the start to provide additional repair needs: *Yes*
    g. There were enough casualties to cause me to perform my leader tasks: *Neutral*
    h. Was the overlay (1) helpful, (2) accurate, (3)complete: *Agree* on all three
    i. How could the overlay be improved:
       (1) Keep it simple.
    j. Other comments:
       (1) 1SGs need a headset or their own simulator
       (2) Add company maintenance teams and medics
       (3) Medical vehicles and recovery vehicles would not keep up with other CSS elements.

Unit B's response to Deliberate Attack Questionnaire Addendum

1. The difficulty level of the CSS requirement during the exercise was...: *About right*

2. The exercise made us focus on ARTEP-MTP task performance: *Great extent*

3. The execution time was: *Too short/About right*

4. More time *should* be spent in consolidation and reorganization: *Agree*

5. Describe any *additional* tasks you practiced in the DATK that were not required in the MTC.
    a. More realistic recovery operations
    b. Fired smoke
    c. Battle resupply

6. Were there any tasks in the MTC that were not required in the DATK: *No.*

7. My participation in this exercise was well worth the time spent: *Agree.*

8. The exercise provided enough activity to keep me actively engaged. *Agree.*

9. SIMNET provided sufficient events to trigger my activities: *Agree.*

Items 10 and 11 were answered on a seven point scale, anchored at the ends as 1, "Not proficient," and 7, "Extremely proficient."

10. Before the exercise, how proficient were you on the task included in the exercise. Median: *Four.*

11. How proficient are you now, after the exercise and AARs? Median: *Five.*

12. Describe the three or four most significant tasks you were able to practice during the exercise:
    a. Casualty evacuation
    b. Maintenance evacuation
    c. Emergency resupply
    d. Control logistics in FTCP
    e. Reporting
    f. Operate FDC
    g. Operate split mortar sections
    h. Conduct mortar fire missions
    i. Battle tracking
    j. CSS planning
    k. Ambulance exchange
    l. Moving medical aid stations

13. What specific tasks were you able to perform more effectively in the DATK as a result of your MTC practice:
    a. Jumping aid stations
    b. Reporting to higher
    c. Battle tracking
    d. Overall awareness of CSS duties and responsibilities
    e. Personnel evacuation
    f. Vehicle evacuation
    g. Requesting support
    h. Operating FDC
    i. Operating split sections